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THE

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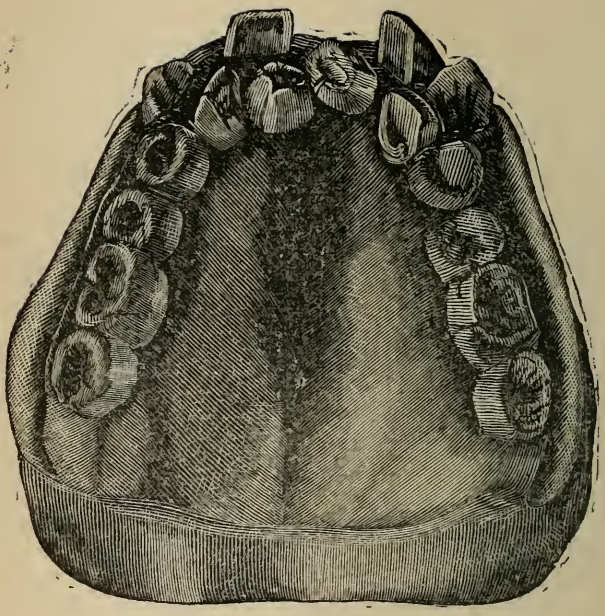

Abnormal Development of the Supernumerary Bicuspids.

(*See Page* 1.)

THE CANADA

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ORIGINAL COMMUNICATIONS.

RARE AND INTERESTING CASE OF ABNORMAL DEVELOPMENT.

BY ED. LEFAIVRE, D D.S., ST. JOHNS.

The following case of deformity and irregularity having interested the members of our association at our last meeting, and yourself particularly, I will endeavour to make a few remarks on it, with the hope that it may prove of some interest to the profession at large.

It is obvious to every one, that the same variety which is found in individual normal features, form, talents and capacities, is also present in deformities; it being impossible to find two men with perfect resemblances, or similar gifts of intellect. In the same measure we cannot find deformities exactly the same.

This has not prevented scientific men from proving that certain rules prevail in deformed as well as in regularly arranged organs; — especially in the teeth. Thus it seems to be generally believed that supernumerary teeth grow in certain places; that in others they are supplemented; that irregularities assume this or that general character. The case I submit does not depart from these observations of anatomists, but offers some peculiarities which I have not noticed in any book, or in practice. In most cases the presence of supernumerary teeth in the centre of the arch, causes the absence of one or more permanent teeth; it is of rare occurrence when they come in pairs, and their form is very irregular. As a rule they are conical, or appear like badly developed bicuspids.

In the accompanying drawing, which is made from the plaster cast, in the best position to give a full view of the case, it may be seen that the proper number of teeth are present, but very much disturbed; the *dens sapientæ* not having yet erupted. The supernumeraries occupy the

centre, on each side of the median line, and look like well-developed bicuspids, though not exactly perfect in shape.

I extracted the one on the right side, which most annoyed the patient. It was longer than an ordinary bicuspid, and slightly tortuous; and evidently formed to last. By their position, and the manner in which they have disarranged the other teeth, I judge that their growth has been antecedent to the permanent dentition; the centrals have probably been retained some time, while the laterals, finding no resistance, have come through almost regularly. The canines found their exit though the gum with great difficulty, and are entirely out of the proper arch.

At the time I took the impression, the patient was between sixteen and seventeen years of age. The rest of his dentition was regular and complete.

The reflection which is made now is, " How did the supernumeraries get into their present position, and being antecedent to the permanent how are they as well organized ?" This is more than I can answer.

I can only say that my young patient looked healthy and strong, and that his features were not so much impaired as one might reasonably expect. Looking at the cluster of teeth, however, I thought of some constellation, and of the Thousand Isles on the St. Lawrence!

After extracting one of the teeth, I offered to correct the irregularity for a moderate charge. I being a beginner, and my patient being poor, which is almost the same, I had to decide that I could not do it just for the mere sake of his good looks.

CARBOLIC ACID.

By G. V. N. Relyea, L.D.S., Belleville.

The remarkable healing and antiseptic powers of this invaluable remedy should be more generally understood by the members of the dental profession. Those who have used it, and observed with what certainty and celerity it will arrest the process of suppuration or promote the growth of healthy granulations, and hasten the healing process will not consent to be without it. Combined with the oil of cloves, it is, I find, an excellent article for obtunding sensitive dentine; removing fœtid odours; arresting obstinate hæmorrhage; treating gum-boils and abscesses.

Some few months since a Mr. Abrams, an assurance agent of our town, came to my office with a chronic sloughing ulcer on the left side of his tongue. He had consulted most of the M.D.'s of this, and our neigh-

bouring towns, all of whom in their turn had either treated, or suggested remedies. Two M.D.'s recommended an operation, and one was anxious to cut a V out of it.

A new comer in town, though an old and good practitioner, spent three hours one evening reading up on Mr. A.'s case, and finally concluded that if he would come to my office, and get all the sharp corners removed from his under teeth, in order to insure against any further irritation from that source, he thought he could cure him. This accounts for his falling into my hands. On examination I found a most perfect set of teeth, and after a thorough diagnosis of the case, came to the conclusion that it was local in its character, and that if I could arrest the discharge I was sure of effecting a radical cure.

Professional etiquette required, however, that the last-named physician should be consulted before he could become a patient of mine; he, however, readily consented, evidently delighted to get rid of a difficult and questionable case. The patient having suffered for full eighteen months, and all remedies having hitherto failed, and having furthermore been assured by the knowing ones that unless he soon obtained relief it would "turn into a cancer," he naturally became very nervous and anxious.

Treatment.—I directed my patient (who is an intelligent man) to dry the parts with a rag or pledget of cotton, and then apply the carbolic acid three or four times, and to repeat this four or five times a day. After three days' treatment the discharge had, in a measure, ceased, and at the expiration of three more there was no suppuration, the wound appearing of a purple hue, and on close examination healthy granulations were appearing. At this stage treatment was discontinued, and in two weeks my patient assured me that he could smoke his pipe, drink a cup of tea, (two luxuries of which he had been deprived) and to-day the surface of the tongue is as perfect as if it had never been effected.

ANOTHER CASE OF ARTIFICIAL TEETH IN THE STOMACH.

BY A. C. COGSWELL, D.D.S., HALIFAX, NOVA SCOTIA.

The April number of the *Dental Cosmos* contained several articles respecting artificial dentures in the stomach, taken from the London *Lancet* and the Boston *Medical and Surgical Journal*. One case where the plate had passed through the body, and another where the denture had been removed by means of instruments. These cases, no doubt, are of rare occurrence, but it is well when such come under the observation or treatment of those of our profession, to give

them publicity, as well as the particulars connected with each, the means resorted to and the result.

I have to add another to the list of accidents in the above direction. The following was caused entirely by the patient wearing the denture when it no longer fitted the mouth, and had become quite loose from the loss of several natural teeth.

This may be a warning to many who wear parts of sets, as well as remind those of our profession, of the necessity of impressing upon their patients the *danger* of retaining such when they become so loose as to fall in almost every act of speaking.

As we occasionally meet such persons, the *desire* on our part is to give them good advice, but unless they call upon us professionally, our *gratuitous* advice or suggestions to have the defect remedied, may be taken as a desire on our part to solicit the patronage of said parties, and hence little thanks for unasked for advice and premature caution. The looseness of dentures may not always be from loss of teeth to which the plate has been attached, but frequently temporary sets are worn when the alveolar ridge and gums have shrunk and absorbed, so as to cause a general looseness of the plates, as well as imperfect fits at the time they are inserted. Parts of sets may be *carried* in the mouth of the patient during the day with less risk than at night, but when in a recumbent position, and folded in the arms of *Morpheus, or some other arms*, the risk is too great, and the danger of swallowing them quite obvious. The following accident occurred some three months since: The lady had the denture made in London by a Mr. Webb. The roots, which several of the artificial teeth covered at the time the plate was inserted, had worked down beyond the margin of the gum, preventing the plate and artificial teeth from fitting accurately, causing the plate to become quite loose, and for some months previous to swallowing it, it was a constant source of annoyance by falling almost in every act of speaking, and causing the patient to keep it in its place by the use of the tongue, and a strong effort to draw it upwards by exclusion of the air, but which no sooner was released than it again became loose. This partial denture contained originally five teeth, consisting of two laterals, cuspid and two bicuspids on vulcanite plate. It was held *in situ* mostly by the laterals fitting accurately between the centrals and cuspid teeth. The width of the plate from right to left side, was about two inches, distant from the incisors across, three quarters of an inch. No clasps. At the time the plate was swallowed, several of the teeth had been broken off close, leaving the four platina pins projecting from the rubber. From the time it was first swallowed, it occupied some five hours in passing into the stomach, pro-

ducing intense, sharp, cutting pain, especially as it passed through the pharynx, and also the œsophagus, until carried beyond the diaphragm into the cardiac portion of the stomach. An instrument was introduced, and an effort made to remove it by means of ligatures attached to a hollow tube, but failed in its purpose; in fact it was a question if her physician was certain whether he felt the plate or not, in introducing into the stomach the instrument for its removal. The patient was sent to the hospital, where she remained several weeks. During that time she suffered considerable pain and sore throat, could not lie on either side, much swelling preventing her securing her clothes around her, pain most severe in the left side of the hypochondriac region, lived mostly upon fluids, and very irregular in her bowels. The above symptoms of inflammation and soreness gradually passed away, and in a few weeks she was enabled to return to her usual occupation as a governess in a family. During an interview with her a few days since, she gave me the above particulars, and enabled me also to judge of the size of the plate she had swallowed, and also ascertain the number of teeth, &c., on it. She seems of the opinion that the denture has *dissolved* in the stomach, and is *convinced* it has not passed the bowels. Being of a feeble anæmic constitution, she remarked that since the accident, for the past month at least, she *never enjoyed better health*, appetite good, digestion improved, regular in her bowels, and in good spirits. Thinking it impossible for the gastric juices of the stomach to act upon the vulcanite, I felt desirous to know what mineral acids would dissolve vulcanite rubber, hence I experimented with the various muriatic, sulphuric and nitric acids, found the two former had no effect upon the piece placed in it, but by applying nitric acid and chloroform, after twenty-four hours the piece had become quite like a sponge in softness, could easily express the coloring material from it, and in drying, it could be rubbed up like powder between the fingers. Now comes a nice question for physiologists, namely: Will the gastric juices of the stomach act upon vulcanite rubber in the same way as upon bone or horn, or will the result be in time, the same as may be produced by acids when experimented upon out of the stomach? Muriatic acid, hydro chloric, &c., being said to be found in the stomach, can they act upon vulcanite as above suggested? May not the fact of the patient being better in general health be owing to the presence of this foreign body in the stomach? The veddahs or wild hunters of Ceylon, as related by Dr. Carpenter, mingle pounded fibres of soft and decayed wood with the honey in which they feed, when meat is not to be had. They know not the reason for so doing, but remarked that they knew that the belly must be filled.

Although Dr. Beaumont's experiments proved, that the presence in the stomach of any substance which is difficult of digestion interferes with the solution of food that would otherwise be reduced, still may not this foreign body act upon the membrane, and cause the puistaltic action to be increased, hence facilitate, at least for a time, digestion, as appears to be in the case to which we alluded.

Foreign bodies have remained a length of time in the stomach, and on *post-mortem* examination have been found, as reported of a sailor in the May number of the *Cosmos*, and also one some months since in this city. There was found in the stomach of a lunatic, a jack-knife, several pieces of coal and a portion of oakum. How long they had been there, could not be told. The oakum seemed to be the cause of the death. Shall report if anything serious occurs to the lady referred to. Fearing death might ensue, she felt desirous to return to her people in England, but her physician thought it not wise, for fear during sea-sickness the plate might be thrown from the stomach, and lodge in some part before it could pass up and out of the mouth ; hence she still remains, hoping all will end well.

DENTAL HYGIENE.

BY H. H. NELLES, D.D.S., LONDON, ONT.

Read before the Ontario Dental Society.

Mr. President and Gentlemen.—In attempting to comply with your request to read an essay at our present Session, I would not, for a moment, assume the position of teacher to the members of this association ; and have made no effort to prepare either an elaborate or learned thesis, but have simply collected a few facts that have become impressed upon my mind during a period of ten years continuance, more for the purpose of causing discussion than for the sake of presenting anything very new pertaining to our science.

The subject of *Dental Hygiene*, upon which I purpose offering a few suggestions, is, in a physiological point of view, not only of peculiar interest, but in its relation to the benefit of the rising generation, it must be considered of paramount importance.

The extreme early age in life in which many of the diseases incident to the teeth make their appearance, and the almost universal prevalence of these diseases amongst the inhabitants of this continent, is a fact of sufficient importance to excite the interest, not only of every one who makes any pretentions to a knowledge of the healing art, but also of every parent who assumes the responsibility of rearing a family.

And whilst this subject is one of general interest, and its application must rest, to a great extent, with the people themselves, yet, the duty of influencing the public mind to a higher appreciation of the principles of dental hygiene, devolves upon the members of our profession.

And every dentist who entertains just conceptions of the responsibility of his calling, and who recognises his first duty as being towards his patients, will ever be influenced with the necessity of exercising his highest abilities, in response to the loud calls upon our science, to arrest an evil of such magnitude as that of the destruction of the teeth.

The rapid advancement of our science during the last quarter of a century, within which period it has attained to the position of a profession, has enabled its advocates to remove, to some extent, the erroneous impressions previously entertained by many, that the teeth are mere *appendages* of the body, to be sacrificed at the caprice of the patient. But there is yet much to accomplish, on the part of the members of the dental profession, ere the public will accord a proper recognition of the benefits it confers, or that we can ever hope to receive for our services a just recompense of reward.

Now, in the application of hygienic principles to the teeth, it is necessary to bear in mind that in their physiological relations, as well as in their physical constitution, they are subject to the same laws that regulate the various other departments of the physical organism. Thus they originate like all other organized animal structures, from the simple cell germ, and advance throughout the successive periods of their formation, in accordance with the invariable laws of natural life; receiving through the blood the elements of their construction, and depending upon the influence of the nervous system for their power of growth. And by these intimate relations to the vital forces of life, they are in the earlier stages of their development especially, just as susceptible to the influences that disturb these forces, as many of the other solid structures of the body.

And any interference during growth of the supply of the essential constituents of their organization, either by severe physical prostration, during which the nutritive process is interrupted, or by the non-nutritious character of the food, must necessarily exert a prejudicial influence either upon the density or uniformity of their structures.

That the density of these organs is frequently impaired, in early childhood, needs no further proof than the readiness with which they yield to the destructive force of agents with which they are brought in contact. And we have frequent and unmistakable evidence of the influence of diseases of the system upon their uniformity, in the peculiar

pitted arrangement of the enamel of teeth, that have suffered during their formative process, by severe attacks of scarlet fever or measles, or some other of the eruptive diseases incident to children. And though these defects of the enamel are sometimes only superficial, and do not always induce decay, still they always mar the beauty of their appearance throughout subsequent life.

And the effects of constitutional diseases upon the teeth are not confined to childhood. For it is no uncommon occurrence for persons more advanced in life to call upon the dentist upon recovering from a severe attack of some prostrating disease of long continuance, and complain of the Doctor's *medicine* having destroyed their teeth; whereas in nine cases out of ten, the breaking down of the constitution of the teeth upon these occasions, is either the result of the destructive force of the disease that has wasted the system, or of its effects in changing the glandular secretions of the mouth and stomach, and thereby subjecting the teeth to their acid action. Under these circumstances, an antacid wash may be of great benefit in neutralizing the acid and lessening its effects. Now, if we can so distinctly trace special cases of disease and decay of these organs to constitutional causes, it is not an unreasonable supposition that habits of living and articles of diet that have a tendency to produce physical debility, should always exert a corresponding influence upon the teeth. And when we consider that there are but few parents in this country who, in rearing their families, even seem to recognise or regard the intimate relation that subsists between the general health of children, and that of their teeth, we are forced to the conclusion that it is to this ignorance and disregard more than anything else, that we are to attribute the natural, or rather unnatural, predisposition of the teeth of the people of this country to decay, to so much greater an extent than that of European or other foreign countries. It is a fact worthy of our consideration that the prevalence of carious teeth, in any country, is generally in proportion to the departures from the rules of health in diet and habits of living; thus, there are the greatest demands upon our art in large cities, where the dissipations are carried to the greatest extent, and where the irregularities in living too frequently have a direct tendency to accelerate the physical degeneracy of our race, whilst among people who retain their primitive habits of life, and whose food is plain and nutritious, the teeth very rarely decay. If we take, for instance, the middle classes of Scotland and Ireland, who, possess, perhaps the soundest teeth of any civilized nations in the world, we find that they are noted for their simplicity of living; and we never heard anything of their physical degeneracy, until they immigrated to this country, and adopted the evils of American life.

Now there is probably nowhere, as among the Americans, such a universal practice of pampering the appetite, with a variety of indigestible pastries and confectioneries, with preserved fruits and mixed pickles, that the human system is utterly incapable of assimilating or converting into the elements of the body. And, as a result of the constant indulgence in unnatural preparations of food, the Americans are proverbially a race of dyspeptics; and dyspeptics seldom have good teeth.

And then, again, the Americans eat faster, and too frequently without properly masticating their food, and live faster, and are more regardless of hygienic laws, than any other civilized nation in the world.

Again, the unlimited indulgence of acid fruits at all hours of the day, that too frequently obtains amongst the children of this country, is unquestionably a very *fruitful* source of decay. Raw fruits should always be eaten after meals, and then only in moderation, and the teeth washed carefully immediately after. There cannot be too much attention given to the toilet of the teeth, at any time. The free use of the brush and tepid water after eating is of incalculable benefit; as the fermentation of particles of food around and between the teeth is a constant source of decay, and always precludes the possibility of our depending, with any degree of certainty, upon any of the operations or appliances of our art.

And then, if it be true that cleanliness is allied to godliness, we may well be disposed to question the orthodoxy of the christian principles of the persons whose breath has become so foul from the deposit of calcareous matter around the teeth, as to render their presence an offense to all good society.

It is sometimes urged in extenuation of these habits of *indolence*, that many people retain their teeth in perfect soundness to the age of threescore years, who have never known the benefits of a tooth brush, or enjoyed the *luxury* of a dental chair. But, it will generally be found, that in these cases the preservation of the teeth is due to their adamantine structure, which has been inherited in common with a robust physical organization, and a simplicity and regularity of living wholly unknown to the youth of the present age.

Another great cause of constitutional defects of the teeth is the close confinement in heated ill-ventilated apartments, during six months of the year, to which too many of the children of this country are subjected; and parents who have the welfare of their children to heart, should spare no efforts to afford them an abundance of exercise in the open air.

With these facts before us we cannot fail to see the necessity of a radical change, in many respects, in the treatment of children, in order to ensure the permanence of their teeth.

PERIODONTITIS.

BY W. H. WAITE, D.D.S., LIVERPOOL, ENGLAND.

The disorder known by the above name consists in an inflamed condition of the investing membrane of the roots of teeth. It may occur on one root only, and in one spot, very circumscribed, or be found extensively spread over nearly the whole surface of the roots. Accompanying this inflammatory state, there is frequently a thickening of the peridental membrane, causing more or less protrusion of the tooth from its socket. The symptoms are tolerably defined, and the diagnosis easy. If the opposing tooth is *in situ*, pain is experienced in striking the jaws together; while at the same time there is present a desire to grind the teeth, for by so doing a kind of temporary relief is afforded. A gnawing, boring pain, considerably aggravated when the head is laid down, and warm at night—not quite so acute as true toothache (except in the worst stages) but quite as distressing—having a marked effect on the mental energies, some degree of concomitant inflammation about the gums in the neighbourhood, and soreness to the touch—these are the chief features arising in connexion with this disease.

Sometimes a patient will be unable to locate the sensations with sufficient precision to indicate the offender, and in such cases, if the teeth are gently tapped, one at a time, with the handle of an excavator, the defaulter will not fail to respond. The causes of this affection enumerated in some of our standard works are various, and, without doubt, periodontitis may proceed from numerous predisposing and exciting causes; still, probably, it would not be unsafe to say that fully 95 *per cent.* of these cases are attributable either to the presence of a dead pulp, or to the manipulation and treatment employed for the devitalization and extirpation of the pulp. The worst forms of periodontitis are to be found where, the cavity of decay having extended very near to the pulp cavity without actually exposing that organ, a large gold or amalgam filling has been inserted, and by reason of the conduction of thermal sensations through the plug, the pulp has sooner or later lost its vitality. Now, such death of the pulp is speedily followed by the liberation of a foul and irritating gas, which, being confined by the filling, works its way outwards through the apex of the nerve canals, and coming into contact with the periosteum, acts as an irritant thereon, inducing determination, congestion, and at length inflammation. Further on the periosteum becomes detached from the root, suppuration commences, and we have as the issue *Alveolar Abscess.*

But seeing that these large fillings of metal alone are apt to produce

such unpleasant consequences, we are led to consider the advisability of interposing some non-conductor between the metal and the base of the cavity. Thus, if a gold filling be intended, we may place a layer of oxy-chloride of zinc, or Hill's Stopping, over the floor, or if an amalgam filling is to be introduced the oxy-chloride answers our purpose, and in some such way it seems probable that many large cavities among the ill-fated first molars may not only be filled but filled with a fair prospect of permanent success. Beyond a doubt, caution and the studious adoption of every preventive measure, are not thrown away in any case of deep-seated caries, for whatever may be the merits of the treatments noted hereafter, it is certainly very annoying to have a patient return shortly after the insertion of a large filling, complaining that "this tooth is so tender, I can't bear to close my mouth."

Remedies as varied as the causes of periodontitis have been suggested from time to time, most of them valuable in some circumstances, and valueless in others. It would seem as though a special bond of sympathy were called into existence between the local affection and the general health of the patient. Cold, disorder of the stomach or bowels, indigestion, rheumatic or gouty tendencies, any and every derangement of the system, appears to act, and be reacted upon by this disease; and oftentimes, baffled by the complications, and besought by the patient, we are led to give it up and remove the offending tooth, rather than encounter the apparently endless annoyance.

Happily the extreme cases are not a large majority. If "dead pulp" can be clearly diagnosed, (and the history of the case, taken together with the opacity of the tooth's appearance, will generally afford decisive evidence) and if the case presents early, say, within two or three days of the commencement of uneasy sensation, there is no quicker or surer method of procuring relief than to remove the filling, open freely into the pulp cavity, and afford a vent for the gas pent up therein, thoroughly cleansing the canals from every particle of dead tissue, and treating with dressing of camphorated spirit, followed by dilute carbolic acid, &c., till all offensive odour has disappeared, and finally, when the condition of health is fully established, filling the canals, and refilling the outer cavity; or, if for any reason it be considered undesirable to remove the filling (and this may often be the case) an entrance can be made from the neck of the tooth, just at the margin of the gum, into the pulp cavity, by drilling right in through the bone, with a sharp spear-pointed drill. This is known technically as "odontrypy." Drills may be easily made of broken excavators, suitable for this purpose, and, if the tactile sense of the operator is sufficiently acute, he will observe that just as the instrument

punctures the pulp-chamber, it will be felt to stick, and by this he will know that the object is accomplished. Frequently, moreover, on enquiry it will be found that the patient has tasted the peculiarly unpleasant gas thus let out into the mouth. As a rule the symptoms rapidly subside after the gas has escaped. Complete restoration may be facilitated by placing a guard of gutta-percha on the teeth of the opposite side of the head, to prevent closure of the jaws upon the affected tooth, and so shield it from irritation of that sort; also, by carefully drying the gums, and then painting the part with the officinal Tincture of Iodine, or the mixture given below.* When periodontitis supervenes on devitalization and thorough extirpation, palliative treatment is indicated, free lancing of the gums, copious bleeding, after which cold applications, without and within the mouth, liberal use of Iodine, or the Iodine and Aconite, which last is certainly an excellent remedy. Again, it has been suggested that *Mercurius Vivus*, the third decimal trituration, given in small doses two or three times a day is a specific in such case. This is also a good medicine, but scarcely infallible. Indeed it is more than doubtful if anything is absolutely certain. The wise practitioner, however, is ever ready to employ any means which the peculiarities of the case, or the experience of his fellows, may suggest; and in this, as in all other affections, will not be bound by prejudice simply to follow a beaten track, but be ready on occasion to exercise his ingenuity to discover the best treatment for each case as it presents, always bearing in mind the intimate relation that exists between this disorder and nearly every phase of systemic trouble.

Perhaps one of the greatest evils associated with this form of dental disease is the fact that patients do not generally recognize the true cause of their trouble. Neuralgia, or *tic*, as they call it in some places, seems to be a sort of universal scapegoat, on whose back are laid all kinds of dental difficulties, and to get rid of which the patients will swallow any amount of physic before they wake up to realize wherein the mischief truly consists, and then too often the disease has passed into the suppurative stage. The last hint as to the treatment of periodontitis, therefore, is never to fail in warning a patient of the possible result in every case, where there appears any reason to suppose that sooner or later the disorder may appear.

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* Dr. Frank Abbott of New York, announced in the "Dental Cosmos" of October, 1868, that he had obtained very satisfactory results from the use of Officinal Tincture of Iodine, Tincture of Aconite root, equal parts, painted on the gum around the affected tooth once in twenty-four hours, till the inflammation subsided.

DRYING CAVITIES.

BY J. H. WEBSTER, L.D.S., MONTREAL.

I have a simple way of ensuring the removal of every particle of moisture from a cavity, previous to introducing the filling, which may not be original, but which I am sure is not generally known, and which I know to be most effectual. I have used cotton wool, bibulous paper, and punk, but I suspect that none of these remove the moisture entirely.

After drying as well as usual with either of the above, I dip a pledget of cotton in chloroform or alcohol, and wipe out the cavity. If not too much is used, it will evaporate by the time you are ready with your gold; but it is easy to absorb absolutely every particle of moisture by another dry pledget. When the chloroform evaporates, the dentine is as dry as punk.

SUCCESS IN BUSINESS.

BY AN OLD DENTIST.

You ask me to write something for our *Canadian Dental Journal*, and I do not know that I can better please you than by relieving my mind of a point of importance, which, though it be not practical Dentistry, is of intense anxiety to the practical Dentist. I refer to success in business.

I might very elaborately and profitably weave together time-worn axioms and maxims on success, which can be found in any "guide" to young men; but I shall merely draw attention to one point of my theory of success, which I consider the next indispensable requisite to a complete knowledge of our art, and the scientific foundation on which it is based.

I never knew a Dentist succeed, in the true sense of the word, who repelled Dental Associations and Dental Journals, and who calculated as "loss," the expenditure of time and money on these two great and noble adjuncts to progress. I might refer to the history of the dental movement in the United States, and point a moral from the biographies of the men who co-operated with, and those who opposed ignored that movement. I know them well, and I defy any one to point to one single name among the latter who ever rose to be even a fourth or fifth rate Dentist. They voluntarily got into the mire, and they stuck there. Served them right! This, truly, is an important truth, worth remembering, that repugnance to Dental Associations and Journals always marks the quack and imposter.

Nothing gives me greater pleasure to-day than the thought that, though

I was suspicious of the success of the "American Journal of Dental Science" when it was first issued, I repented of my folly with the issue of the second volume, and have never since ceased to take it and pay for it in advance. You cannot keep up with the times without consulting your Dental Journal, and you will find no man succeed who does not keep up with the times.

Nothing denotes more brotherly love and undoubted consistency than to be found zealous in promoting the advancement of our profession in our own country. It is but right and proper that we should have a cosmopolitan spirit in this matter, but much more proper that our zeal should be spent in our own sphere, and any talents we possess, brought to bear for the interests of the profession at home. There are plenty of good and true men abroad to manage their own interests; we want more unity and co-operation for our associations and our Journal at home. The successful man in medicine or law is found concentrating his greatest efforts for progress on the uncultivated sphere in which he lives. He buries all instinctive feelings of dislike, all little prejudices and suspicions, and manfully endures much that is painful to him, for the good of his profession. Why should not the dentist do likewise?

I do not mean to say that success in business is gained by simply supporting our associations, our Journal, &c., but I do mean to say that the knowledge a man obtains by these means contribute greatly to his individual progress, and the better dentist he can make himself the more successful is he likely to be. To be esteemed by one's *confreres* contributes in no small degree to success. To be despised by one's *confreres* is ominous, for no professional man really worthy of esteem is ever really despised. I have all my lifetime aimed to covet the friendship of my brother dentists quite as much as the confidence of my patients.

The great improvements in our science, and the growing importance of Dentistry in Canada, positively compel us to maintain a periodical such as the "C. J. D. S," unless we wish to be read abroad as the laggards of a noble profession. From old experience in another source, I know something of the difficulties of editing such a periodical, and I doubt if any can properly realize the amount of such work. Personally, I feel deeply grateful for the existence of a Dental Journal in Canada, and I think I can speak for the Profession of Ontario, and assure you now of general sympathy and support.

I find I have rambled somewhat from my theme of success, and have omitted much I intended to say, but these points are inseparable with that kind of success which makes a man feel he has honoured his profes-

sion, and not raised up a name to be pointed at with scorn. The inspiration one receives from making himself useful in every good work, and in supporting our literature, our laws and our license, contributes much more to success in business than one would at first believe. The consciousness that we do our individual work honestly is pleasant to the soul, but I would not take the income of ten years, and be without the pleasures of memory I enjoy, of having put my shoulder to the wheel in the early reform efforts of the profession in the United States and Canada. So mote it be to all who read this humble advice.

PROCEEDINGS OF DENTAL SOCIETIES.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

MEETING OF THE BOARD OF EXAMINERS.

REPORTED BY J. B. WILMOTT, SECRETARY.

The Regular Semi-Annual Meeting of the Board of Examiners of the Royal College of Dental Surgeons of Ontario was held in Toronto, July 19th.

The meeting held on the 8th June, not being in accordance with the statute, all business transacted was informal.

The first business of the meeting therefore was the election of officers.

The election was by ballot and resulted as follows:

President, H. T. Wood; treasurer, A. C. Stone, M.D.; secretary, J. B. Wilmott; registrar, John Bowes.

Seven new and five old applications for license as five years practitioners were before the Board. Five of these were refused and recommended to come up for examination. Seven were granted license as follows: C. L. Wood, Wellington; John Reid, Watford; D. A. White, Ridgetown; H. L. Harnden, Newmarket; U. J. Chambers, Waterford; and James C. Parsons and Lawrence Vanderpant, of England.

Eight candidates presented themselves for examination, to seven of whom licenses were granted, as follows: William Allingham and Edmund Seagur, Toronto; D. F. Ogden, Mitchel; Geo. Hutchison and Wm. McPhee, Ottawa; B. G. Gilbert, Picton; C. G. Stackhouse, Smith's Falls.

The consideration of the "College Question" occupied a very large portion of the time of the Board. After very full discussion, and ascertaining that there then existed liabilities against the college of considerably over $100; that there were not funds in the Treasurer's hands to

pay more than 75 per cent. of the ordinary expenses of the present meeting, the following resolutions were adopted:

"Whereas, in the opinion of this Board, the establishment of a Dental School in connection with this Board has not been successful, and the present financial position of the school not being satisfactory; and whereas the financial position of this Board is embarrassed, the new Board assuming office with a very considerable indebtedness;

Therefore resolved:

1st. That the present College rooms be relinquished, and the furniture sold to liquidate the claims against the College, the balance, if any, of the proceeds to be paid into the Treasurer of this Board.

2nd. That all appointments of teachers, and arrangements for conducting the Dental School in connection with this Board be and are hereby cancelled.

3rd. That the School in connection with this Board, be suspended for one year.

4th. That the Secretary notify all licentiates of this Board of the purport of the third resolution.

The following resolution bearing on the same subject was also adopted:

That Messrs. Wood, Willmott and Callender be a Committee, empowered by this Board, to make arrangements for conducting a private Dental College in the city of Toronto, pending the anticipated amendments to the Dental Act. And this Board pledges itself in the event of such a school being established, to accept its tickets from *Candidates* for examination, as evidence of their attendance at a Dental School, according to their previous resolution bearing on this subject."

The Committee succeeded in making such arrrangements with Messrs. Adams and Callendar, of Toronto, that they hope shortly to be able to announce the establishment of an efficient Dental College by private enterprise.

J. B. Willmott, Secretary R. C. D. S, drawer 90, P. O., Hamilton.

BOARD OF TRUSTEES AND EXAMINERS FOR PROVINCE OF QUEBEC.

The next meeting of the above corporation will be held on Tuesday the 8th inst., in Quebec city.

QUEBEC DENTAL SOCIETY.

A regular meeting will be held on Tuesday evening, the 8th inst., in Quebec city, to elect officers for the ensuing year, and discuss a good programme.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

[By request of many subscribers, we will resume the epitome of the reports of dental societies in the United States, England and elsewhere; an idea which was original with this Journal, and which we believe is appreciated in this busy age, when subscribers want as much *practical* matter as possible. The purpose in this place is to condense reports, so as to give the gist of discussions, and to omit entirely all reference to elections, and the details of finance, formal resolutions, &c. Instead of filling our pages with these details, which are only of interest to a few, we will aim to select what we judge will be of benefit to the many.]

STATE DENTAL SOCIETY OF PENNSYLVANIA,—June 21, 1870.—In a discussion on "Extracting Teeth," Dr. Magill said he considers simplicity in instruments desirable; uses as few as possible; advocates a low chair; does not recommend lancing gums, except for going through the process, and in that case makes a vertical incision only.

Professor Barker said the operator should study the law of forces, did not think strength so necessary as a correct application of the force; thought the proper use of the upward or downward force one of the elements of success; the alveolus should be crowded out of the way; advocated but one instrument when practicable, especially when administering anæsthetics.

Dr. Gillespie thought lancing not generally necessary except at the posterior side of the wisdom teeth.

Professor Barker said that for taking impressions of palatine defects he uses a piece of sponge, size of the aperture, fastens a wire for the purpose of holding it, saturates the sponge with batter of plaster, and secures the impression in one piece.

"*Treatment of Exposed Pulp.*"—"Dr. Robbins thinks the pain from the application of oxy-chloride of zinc for capping nerves, may be obviated by using a weaker solution of the chloride.

Dr. Gillespie uses carbolic acid as a preliminary application.

Dr. King prefers pure creasote; thinks 95 per cent. of exposed pulps can be saved; does not always fill immediately; sometimes treats for some time with creasote.

Dr. Neidich thinks gutta-percha as good as oxy-chloride of zinc; does not think there is any difference in the action of creasote and carbolic acid; believes the pulps have sufficient recuperative power to close the opening if protected from thermal changes and external irritants; has seen such cases closed by secondary dentine or calcification of the pulp,

without the aid of art; does not believe a diseased pulp can ever be restored to health; in such cases extirpate.—*Dental Times.*

California State Dental Association, June 29, 1870. —"*Devitalizing Nerves and Subsequent Treatment.*"—Dr. Younger uses paste of cobalt, arsenic and sulph. morphia to devitalize; removes in 24 hours; treats with chloride zinc, tinct. iodine, iodine and creasote; fills point of fang with cotton steeped in creasote; rest of the fang with Hill's stopping, or gold: fills crown and pulp cavity with gold.

Dr. Menefee uses dry arsenic and morphia; caps with lead, seals with cotton and sandrac and removes pulp next day; treats with fluid ext. ergot, and fills.

Dr. Berk uses spray when possible, and removes pulp at once and fills.

Dr. Roberts applies tinct. aconite, erethrum and chloroform in equal parts for ten minutes; removes pulp without pain and fills.

Dr. Knowles uses spray when possible; thinks a surgical operation better than chemical action, treats with iodine and aconite; does not fill the fang with cotton, nor swab with creasote; nature protests against its use elsewhere—why not in the teeth? Uses creasote only when pulp has been destroyed by chemical action; fills entirely with gold.

"*Bases for Artificial Teeth.*"—Dr. Paine has known cases of diseased mouth *cured* by substituting vulcanite for gold.

Dr. Bull has met with as many cases of diseased mouths where gold was worn as where vulcanite was used.

Dr. Prother had seen the ill effects of too deep air-chambers; used large shallow ones.

Dr. Bunnell and others believed that the trouble complained of with rubber arose from *uncleanliness.* Referred to a case where the set had not been removed for seven years.

New York State Dental Society, June 29 and 30.—The Legislature of New York State has confer ed on this Society the power to confer the degree of Master of Dental Surgery in addition to the diploma.

Dr. Atkinson read a paper on "Why do teeth decay?" giving a clear statement of the process of the formation of the teeth; commencement and progress of deposit; currents carrying the fluid pabulum; causes of disturbance and consequent effect. Decay results primarily from imperfect formation; imperfect formation is not due to deficiency of material, but to disturbance of the process of deposition and nutrition.

Dr. Abbott, in reference to the use of Hill's stopping, said he puts in the filling and then throws cold water on it to cool it, and then cuts it

off with a sharp instrument. Thinks the practice of driving wedges between the teeth when they are tight together is a villainous practice.

Dr. Elliott to fill roots, puts in first some gold, then ropes of gold mixed with oxy-chloride of zinc.

Dr. Straw thinks a root thoroughly filled with gold from foramen to crown is the best that can be done for it.

INDIANA STATE DENTAL ASSOCIATION, JUNE 28.—The protection of exposed pulps by means of oxy-chloride of zinc was highly approved of.

Dr. Keighly prefers aluminum to rubber.

Professor Watt thought we wanted something more easily manipulated than rubber; was of the opinion that humanity had long enough been poisoned by rubber.

Dr. Morrill has observed a aluminum plate to become impure in the mouth when not much care was taken; advocates rose pearl as a substitute.

AMERICAN DENTAL ASSOCIATION.—10th Annual Meeting, held at Nashville, Tennessee, August 2, 1870. A resolution was adopted to correspond with the publishers of American school books, and "ascertain if some plan can be devised, to have short, plain statements inserted of the number, name, form and arrangement of the several teeth in the deciduous and permanent set.

"*Pathology.*"—Dr. Walker called attention to "the new disease in the mouth from rubber plates." In every case examined he found disease. There is first thickening of the mucous membrane, then sores appear, looking often like a piece of half-boiled beef cut across the grain. He found the processes of the jaw bone often absorbed as a result of this disease.

A lively discussion ensued on the local effects of vulcanite plates, and several spoke very disparingly of the base. Dr. Walker asserted that the wearing of rubber for artificial sets had produced a new disease in the mouth, due to articles used in the manufacture, such as mercury, etc.

Dr. Morgan had seen few mouths where there was not a disease if artificial teeth were worn. Nature had not intended false roofs to be worn. Cases had been reported where platina and gold had been worn and given trouble. A case was cited of a lady wearing an 18-carat gold plate, who had raw sores in her mouth; this was cured by wearing vulcanite.

Dr. Kulp had investigated the effects of seven hundred vulcanite plates, one hundred and forty gold, two hundred and thirty silver, ten

platina, and twenty of other bases. In proportion he found fewer mouths n a diseased condition where rubber was worn than where silver; about as many in proportion where gold plate was used. Tin and cheoplastic uniformly produced a diseased condition of the mucous membrane where aluminum having teeth attached with some other compound was used. Unif rmly the testimony was, that rubber was worn with more ease than any other substance, except from its extra thickness.

Dr. Jones said in most of these cases mercury had been found present in the system. He had a patient who could not wear a gold plate but a few times. Every week or so, by taking out the plate, mercury was found upon it, which being driven off by heat, he could wear it. A black rubber plate, highly vulcanized was tried in the gentleman's mouth with success.

Dr. Allen finds that the more continuously persons wear a plate the better it fits. A deep air chamber should not be used, as it draws down the mucous membrane.

Dr. Crouse thought the idea of mercury, quinine or calomel in the system a notion, and erroneous. Thought rubber produced more trouble than other substances, because of its non-conductibility.

Dr. Fowler thought that platina would create inflammation in mucous membrane sooner than any other.

Professor Atkinson—What is the cause of necrosis? Can mercury cause it? I challenge the world to prove it. I hold that until made a binary it cannot enter the system, but may be between the cells as a simple element entangled in the tissues. Anybody who has shot squirrels goes to the hickories. Any one who wants to shoot mercury must not go into the bones, but go along the margins, the alveolar processes. It does not dissolve the tissue. What, then, where a huge necrosis is found? It is syphilis: it is the result of transgression of the connubial law. Treat the case as if it were syphilis.

Dr. Taft said Professor Atkinson seemed to consider all disease due to the introduction of inimical matter into the system. No doubt with some but a small amount will, if introduced, produce trouble. The treatment of wasted alveolar process and diseased bones—namely, the introduction of properly diluted sulphuric acid, so as to dissolve and permit the diseased bone to be washed away—of course requires care and knowledge. He thought sulphuric acid would act without injuring the living part beyond the disease; nitric acid or glacial acetic acid would not operate so well. The method of applying was to open up the cavity and introduce the tent, making but small disturbance among the soft parts around. Requires great care.

"*Dental Chemistry.*"—Dr. Allen—The Creator has taken the trouble to prepare our food properly, and we go to work and throw out the mineral portion. 40 lbs. are taken from every barrel of flour, and a child, it is estimated, uses half a barrel a year. Thus it loses 20 lbs. a year or 400 lbs. in 20 years. Every one knows that hens require lime to make their eggs.

Professor Cutler—Children require in proportion to their weight, more food. When developing, feed with the mineral element, but when the man has matured crowd him with the fine flour. No change takes place in hard tissues after they are once fully formed.

Dr. Allen—In Europe, where the poor do not change the proportion of the food, they have better teeth than the aristocracy. When they come here they lose their teeth, because they neglect to supply the deficiency of loss. It is well established that the hard tissues do change, and it is essential to keep up the supply for the loss to be replaced. We should popularize the idea of grinding up the whole grain as the ancients did.

Dr. Dickerman—May not the climate have something to do with the change of the teeth?

Dr. Allen referred to Humboldt, who says the teeth of Indians of all sections were sound. It depends upon the food.

Dr. Allport thought the teeth in England worse than in this country; among the nobility, good regular teeth are hardly to be found.

Dr. Allen—The teeth of field hands in the Southern States, as a general rule, are good, but the domestics and whites have poor.

Dr. Morgan—The negroes are almost universally scrofulous, and with unsound teeth.

Dr. Carrol—The males have generally better teeth than the females. The air breathed has much to do with it. We ignore too often the food taken into our lungs.

Professor Stellwagen—If the elements necessary for the formation of the dental structures are not introduced into the system, we cannot expect to find well-developed and normal organs. We cannot better select the proportions of our food than has been already done for us by nature. He had seen the benefit in his own family of introducing bran bread. He laid great stress upon the importance of keeping the saliva in an alkaline condition, simply by rubbing prepared chalk around the mouth, pressing it between the teeth upon retiring, and washing out thoroughly, two or three times every day, with lime water. In some fifty cases he had tried, the condition of the teeth was improved by chalk, lime water, bran bread, &c., the dentine becoming harder in some, and less frequently attacked by caries.

Dr. Kulp—A mother can give her children good teeth.

Dr. Crouse advocated cows milk pure for infants.

Dr. Cobb thought it the duty of the dentist to attend to the hard structures, and let the physicians attend to the others.

Professor Taft took exception to the remarks of Professor Cutler, with reference to crowding the system with one kind of food, and depriving it of another. At all times during life the phosphate of lime is required; he does not believe that the system will take up any more than is required. That the bones will be solidified by any increased amount of mineral material in the food, he thinks a fallacious doctrine.

Professor Bogue—There is one point that may be brought in, that of discoloration of dental tissues. This may be due to hœmatin, iron, or one or both, if it exists within the dentinal tubuli. He conceived it due to the oozing of the contents of the blood globules into the dentinal tubuli. *Cosmos.*

(*To be continued.*)

SELECTED ARTICLES.

HEREDITARY TRANSMISSION OF DENTAL IRREGULARITIES.

BY J. H. MCQUILLEN, M.D., D.D.S.,

Professor of Physiology in Philadelphia Dental College.

The transmission from parents to their offspring of normal and abnormal characteristics in the re-appearance, generation after generation, of the same features, colour of the hair, tones of the voice, movement of the body, etc., and of such diseases as phthisis, scrofula and gout, is a subject of general recognition. This tendency to the reproduction of individual peculiarities in the descendants of a human being is in no portion of the organism made more markedly manifest than in the structure, size, form, and relative position of the teeth. Particularly is this the case in the re-appearance of irregularities of the teeth, in which, with almost photographic exactness, the same tooth or teeth occupying a malposition in the mouth of a parent are frequently reproduced in the children and grandchildren. In illustration of this, I propose to present a series of carefully recorded cases which have come under my own observation, and then to inquire into the *causes* producing and the *law* controlling such phenomena.

As a case in point, the father of a family of four children, a daughter and three boys, has the two superior lateral incisors standing slightly within the superior dental arch, so that in the occlusion of upper and lower teeth, when the jaws are closed, the right inferior canine strikes outside of the superior lateral incisor and canine.

Although the irregularity was not so decided as to attract general attention, he called upon a dentist when a lad, sixteen years of age, to consult him relative to its correction, but was assured that it would be a waste of time to make the attempt; several years later, after reaching manhood, an unsuccessful effort was made.

Of the children of this gentleman, the daughter, aged sixteen, up to a few months ago had the superior lateral incisors standing very far within the arch, the right superior incisor also deviating slightly. Owing to a fall when four years of age, in which the upper jaw of the right side was slightly injured by striking against the edge of a table, and no doubt making a serious impression upon the follicle of the right superior canine, that tooth has failed to make its appearance. In the lower jaw the right lateral incisor stood so far within the arch as to press upon the tongue and interfere with distinct articulation, and the central incisor and canine were quite close to each other, almost concealing the lateral from view.

On bringing the upper and lower teeth together, the right superior central incisor closed *inside* of the inferior central and *in front* of the inferior lateral, while the superior lateral was back of the inferior canine and the left superior lateral inside of the inferior one, producing an articulation as shown in the accompanying illustration Fig 1.

FIG. 1.

The irregularity in this case was so marked as to attract general attention, and the occlusion of the teeth, had it not been corrected, would have eventuated in a permanent and unsightly prominence of the lower jaw most destructive to the harmony of the features. In the course of two months, with a very simple, easily constructed appliance, which could be readily adapted by the patient, the defective position of all the teeth was corrected, and a result obtained most gratifying to the patient: completely changing the appearance of the mouth, and greatly improving the expression of the face.

The fixture employed consisted of a silver bar of the thickness of or-

dinary lower plate for artificial dentures, two inches in length by a quarter of an inch in width, perforated by four holes, and then, with a thin, flat file, cuts were made from the edge of the bar to these holes, making a fixture similar to the lower figure in the accompanying illustration Fig. 2. India-rubber rings, cut from French tubing, were readily passed over the bar (which rested on the front surface of the superior incisors) and around the deflected teeth. The constant, gradual contraction of the rubber drew the lateral incisors into their proper places in the arch. A bar of similar construction was also used in the lower jaw. After becoming familiar with the necessary manipulation, the application of the fixture was made entirely by the patient, thus relieving the operator of considerable trouble. The propriety of employing a fixture of this kind in such cases was originally suggested by me in the November number of the DENTAL COSMOS for 1859.

FIG. 2.

In the eldest boy of this family, aged fourteen, the superior lateral incisors deviate from the regular line of the upper arch, but not sufficient to excite comment or close inside of the lower teeth.

The second boy, aged eleven, has the superior lateral incisors so far within the arch as to be half hid by the adjoining centrals. In the occlusion of the upper and lower teeth the superior laterals of course strike inside of the inferior ones.

In the third boy, aged seven years, the permanent central incisors have erupted, while the laterals have not yet made their appearance. The indications are, however, that there will be a repetition, in some degree, of the prevailing type in the other cases. *Cosmos.*

(*To be continued.*)

PROPER STEAM ROOM IN VULCANIZERS.

Fluids are much more expansible than solids, and the expansion of a No. 2 vulcanizer *full of water*, would be about a fluid ounce in going from ordinary temperature at 212°, and as the ratio of expansion increases with the temperature, it is fair to assume that at 320° it would amount to two or three ounces in bulk. The force of expansion, it must be remembered, is practically irresistible in solids or fluids. A steel vulcanizer, with sides an inch thick, would not resist it. This fact will show the absolute necessity of allowing a proper amount of steam room in vulcanizers, at least half an inch, and may account for some otherwise unaccountable cases of explosion.—*Dental Advertiser.*

HOW TO TRUE A CORUNDUM WHEEL.

BY C. H. BENNETT, LIVERPOOL, N. Y.

In making good joints true wheels are indispensable. The method which I have adopted with entire satisfaction cannot fail to be of benefit to others. The wheel being adjusted to the spindle, a piece of sponge well saturated with alcohol should be placed in contact with it. Revolve the wheel very rapidly, holding a piece of corundum slab against the uneven surface. The friction will produce just heat enough to cause the alcohol to dissolve the gum shellac on the surface of the wheel, and in a few minutes it will become perfectly true, clean and sharp.—*Cosmos.*

BLACKENED FORCEPS, &c.

BY A. A. DE LESSERT, ABERDEEN, SCOTLAND.

Prof. Inglis, of the Aberdeen University, has all his midwifery instruments blackened in the same way as the volunteer rifle barrels. This takes away from the sharp, formidable appearance of bright steel, prevents the rust, and is much more easily kept clean. It does not in any way injure the tempering of the steel.

I feel sure this will be a valuable hint to dentists in regard to their forceps and many other instruments. Almost any gunmaker can do it for a mere trifle, and in the case of new instruments the cost would be still less, as the blacking would take the place of a great amount of the finishing of the surface.—*Brit. Jour. Dent. Science.*

DESTROYING THE PULP WITHOUT PAIN.

BY J. NEELANDS, L.D.S., LINDSAY, CANADA.

A great dread of the operation of destroying the pulps of teeth seems generally to prevail among patients, owing to the severe pain which is usually experienced after the application of the arsenical paste, as in most cases used. Some two months ago I accidentally discovered that by applying a small quantity of carbolic acid to the pulp of the tooth, and allowing it to remain for ten or fifteen minutes, after which it may be removed, and then applying the arsenical paste, little or no pain whatever is experienced. I have adopted this mode in quite a number of cases, and there has not been a single failure. By diluting the crystals with about an equal quantity of water, the carbolic acid may be inserted into the cavity on a little cotton with the point of an excavator. In full strength, the carbolic acid is a powerful escharotic; and to prevent

injury to the gums, it is advisable to cover it with a solution of gum sandrac, or some other preparation. I would recommend others to try this method and see if their experience coincides with mine. *Cosmos.*

OS ARTIFICIEL IN A NEW FIELD.

BY H. V. KAGEY, ARCOLA, ILL.

Long after a desired distance has been obtained in separating crowded teeth, we are generally obliged to continue the use of wedges for a longer or shorter period of time. And these, if not frequently renewed, will cause trouble. Now, in order to avoid this continual renewing, and evil if not renewed, I use oxychloride of zinc. Fill the space, obtained by previous wedging, with a small pledget of cotton, thoroughly saturated with the os artificiel. This, while soft, can readily be adapted to the different angles and surfaces of the teeth; and when once hard, will serve as a *prop* that will stay. Other advantages, as colour, etc., will be apparent to all. When desirable to remove it, file as in separating. *Cosmos.*

BIBLIOGRAPHICAL NOTICES.

MANUAL OF THE DISCOVERY, MANUFACTURE AND ADMINISTRATION OF NITROUS OXIDE. BY F. R. THOMAS D.D.S., PHILADELPHIA, S. S. WHITE, 1870. This neat little *brochure* of 122 pages is designed to furnish information relative to the use of nitrous oxide in dentistry. It is plain and practical, illustrated by 22 wood cuts, of apparatus, position in operating and forceps adopted for various cases. Its contents consist of clearly written chapters on the discovery, introduction and manufacture of nitrous oxide, its degeneration, administration, potency, safety, resuscitation, physiological action, its administration for operation in general surgery, &c., &c. We can recommend it as a useful and concise little manual.

THE PHYSICIAN'S VISITING LIST FOR 1871. LINDSAY AND BLAKISTON, PHILADELPHIA. We have received the above very compact and convenient engagement book for medical men, which is now so popular with the profession. It contains an almanac for 1871 table of signs:

Hall's ready method in asphyxia, poisons and their antidotes; table for calculating the period of utero-gestation; blank leaves for visiting list; for monthly memoranda, addresses of patients, nurses, obstetric and vaccination engagements, &c., &c.

EDITORIAL.

PROSPECTUS OF VOLUME THIRD.

Having confidence in the good will and spirit of the Canadian dental profession, to whose interests this journal is especially devoted, we enter upon our third year with renewed vigour, and a determination to be punctual, to improve in every possible respect, and to make the dental periodical of this Dominion a credit to the Canadian profession, at home and abroad.

The arrangements made for punctual issue, illustrations, &c., necessarily increase the cost of publication, and we have specially to ask our subscribers to encourage us by a prompt remittance of their subscriptions before the 1st of December.

1. The date of publication for the future will be the 1st instead of the 15th of each month.

2. Original wood cut illustrations, engraved by one of the best artists in the Dominion, will be given as often as possible. We also hope to be able occasionally to present our readers with valuable illustrations appearing in other periodicals.

3. Particular attention will be paid to condensing, without spoiling, the reports of Foreign Dental Societies, omitting all reference to matters of no practical moment, such as finance, elections, &c.

4. Several changes have been made in the general appearance and arrangement of the journal, which will, we trust, meet with approval.

5. Dr. G. C. Daboll, of Buffalo, has accepted a corresponding editorship, and will assist us.

6. The "Editorial Notes on Practical Subjects" will be discontinued, in order to give more prominence to the contributions of others.

7. We will regularly receive every Dental Journal in the world, and a large number of medical and other scientific periodicals, from which judicious selections will be made.

8. Cash in advance. The principle of cash in advance is the only safe one to work upon in publishing a journal of this kind, which is limited to one profession, and is not published as an advertising auxiliary of

any manufacturer or college. So far it has been pretty fairly responded to, but we have decided to ask the profession, without a single exception, to comply with these terms before the 1st of December. The principle is one which ought to be encouraged by all who wish the journal well.

We will give a great deal of our labour and time,—and time alone is money to a dentist, — without pecuniary remuneration, to bring out this periodical month after month; and every cent, and more, of its income will be spent towards defraying the actual cost of publishing. We would be very glad to add 16 pages more if we felt warranted in doing so, but this, with other improvements, must depend solely upon our subscribers. We hope that we will not be obliged to dun, but that those who receive this number, will at once sit down and enclose their subscriptions *before they forget it.*

W. Geo. Beers, L.D.S.,
40 *Beaver Hall Terrace, Montreal.*

WORDS IN SEASON.

No better testimony to the progressive character of dental science and art can be afforded than the fact that in a comparatively short while after the issue of text-books, they are, to a great extent, behind the times; and authors only maintain their reliability on practical points by new editions. An intelligent profession, therefore, naturally demand intermediate guides to pick up the newly made links in the chain of progress, and to concentrate the various additions to the stock of professional lore made from day to day. This want is so appropriately supplied by dental periodicals, that they have become more indispensable to the dentist than any one unacquainted with the progress in the theory and practice of dentistry would at first conceive.

Theories reverenced not many years ago as profoundly perfect are superannuated; methods of working, instruments and appliances which caused operators ten years ago to swear like troopers, are now almost traditional, and we have got so accustomed to the ever-increasing progress made by our inventors and manufacturers, that we receive with sublime *nonchalance* some ingenious improvement destined to revolutionize our practice. In fact,

> "We think our fathers wrong, so wise we grow;
> Our wiser sons, no doubt, will think us so."

In almost every part of the world where dentistry has any local habitation, the profession are fully awake to the necessity for higher education,

associative effort, and legislation. The narrow-mindedness of the old times, when lips were sealed and laboratories were sanctums, has almost disappeared; and only a few examples now exist among us of the scrupulously secretive practitioner, who strives to save his declining reputation by sneering at and ignoring his more liberal *confreres*.

The progress of practical dentistry in Canada has kept pace with the times. Never has there been in the history of the Canadian profession, such active thought or more noble aspiration as exists to-day; and, we may add, such determination to so raise its character and condition, as to claim for it the honorable professional and social position it has fairly earned and received elsewhere. In this ambition, liberal men of all learned professions will sympathize, and an intelligent public will one day have reason to feel grateful.

Three years ago we in Canada had no moral or legal right to call ourselves a profession; there was no co-operation on any point, no association, and many regarded dentists as a nondescript sort of beings, something of a cross between quack doctors and boss carpenters.

To-day dentistry in Canada is as legally a profession as medicine or law; public confidence in it is greatly increased; associations for mutual improvement meet regularly; boards of examiners test the qualifications of those who desire to practice, and the dental acts of incorporation of Ontario and Quebec confer a decided *status*, which cannot be mistaken. In this connection, may we not venture, as modestly as possible, to say, that this journal, now in the third year of its existence, has helped the good work of reform, and materially contributed to reflect the honor and intelligence of the Canadian dental profession? May we not venture to say that through it the dental profession of this Dominion, as a body, receives an amount of respect and fraternity at home and abroad, they could not possibly obtain without such a medium? Be this as it may, we will conscientiously and earnestly continue to use this journal, to advance the intelligence and prosperity of the Canadian profession in particular, and to promote community of professional intercourse and liberality of sentiment, a work in which every dentist has a personal interest, and should assume a personal share, by giving this journal his hearty sympathy and prompt support. B

" READ, COMPARE, DIGEST."

" Read, Compare, Digest" is a motto that could be adopted with advantage by every member of the Dental Profession.

The successful dentist of to-day is the man that reads, and by success

we do not mean to use the word in the pecuniary sense, but in that broader interpretation that means the attainment of high position among compeers, the respect of competitors, and the accomplishment of works, that more than anything else demonstrate true merit. The dentist should be posted in everything that concerns him in his character as an operator in dental surgery, from the record of new discoveries, inventions and improvements to the essays and dissertations on their practical application. The mind is thus constantly stimulated and kept bright by contact with new thoughts and ideas, which rapidly amalgamate with the practice, correcting errors, dispelling doubts and imparting general strength. The dentist that reads acquires confidence; not that variety, however, that springs from an excessive development of the organ of self esteem, but the confidence of intelligence of reason, the result of the practical application of the motto that heads this article. That the rapid advancement of the profession for the past twenty years is due in a large measure to its literature, will be conceded by every one, and the importance of a literature devoted to a special interest is shown by the fact that there is scarcely an enterprise in successful operation to-day, of any character, that has not its journal, through the columns of which its peculiar interests are advanced. The legal standing which the profession is rapidly assuming on this continent calls for a much higher standard of excellence than has been required heretofore, and that *call* is arbitrary. The student is obligated to observe it and the man in full practice must look to his future. *He must "read, compare and digest."* To furnish something worthy the attention of the profession, a channel through which some good might flow, has been our aim for the past year. The Journal is in its infancy, but its life thus far has been one of health and strength, and the promise is good for the future. With this number commences the third year and third volume, and inspired by the past we hope to fulfil our promise, that among our columns much will be found that will furnish food for reflection, and be read with profit.

D.

THIS NUMBER

Has been purposely delayed until November, in order to insure future punctuality, and we hope to have every succeeding number posted to subscribers two days before the 1st of each month. We send this number to every dentist whose address we could obtain. Those in Canada who do not intend to encourage it, will please return this copy with their names marked in one corner. Those who do intend supporting it will

please forward their subscriptions before the 1st of December next, as we are obliged to adhere to the principle of cash in advance, owing to increased expenses and the difficulty of collecting after the year has expired. We will therefore not send the JOURNAL after this number to those who do not remit before the 1st of December, as we will tak non-compliance with that rule as equivalent to a refusal to suscribe. *Remit before you forget it.*

"THE PYROXYLINE" BASE FOR ARTIFICIAL DENTURES.

We will publish the full instructions for using the above base in the January number. As the agent charged $5 for the secret, every subscriber who remits his subscription before the 1st of December, will get these instructions and the Journal for one year into the bargain, for less than half the cost of the former. The days of secrecy are past.

PILING ON THE AGONY.

Our contemporary, the *Dental Office and Laboratory*, has a "cure for piles" in a recent number, from a correspondent. We would simply have enjoyed it as a good joke but for the editorial endorsation, "we hesitate to denounce this as untrue because it does not come within the range of our belief. If we reject all from our belief that is not capable of *demonstration*, then indeed is our creed a short one. "There are more things in heaven than are dreamt of in your philosophy, Horatio."

Here is the cure: "Carry a piece of alum about the size of a hickory nut in your pocket (pants,) with your keys, knife, &c.; and a horse chestnut in the other pocket."

This is mysteriously profound. We suspect the Illinois correspondent has been humbugging, but if our contemporary has any real faith in such cures as the above, will he please ask some one to try the cure suggested by a friend of ours, which is not patented. Float a hair from the tail of a kangaroo in a distilled dew drop, and swallow on a periwinkle before going to bed, at the same time sneeze and say "Ss-kat." That's infallible. "There are more things in heaven than are dreamt of in your philosophy, Horatio." *B.*

OUR ADVERTISERS.

We ask the profession in Canada, who are now a large and important body, to patronize liberally those gentlemen who advertise in our *Journal*

during the year. It pays to have a good stock; it facilitates business, by saving time and temper; and when our *confreres* have money to spend we hope they will spend it with our advertisers. Enterprise on both sides pays.

We have to thank Prof. McQuillen, editor of the *Cosmos*, for the presentation of electrotype duplicates of the illustrations to accompany his article on "Hereditary Transmission of Dental Irregularities." "Three more illustrations will accompany the continuation of the article in the next number."

MISCELLANEOUS.

A dentist in Philadelphia has traced out the career of 1,000 dentists with this result: 163 died before they reached middle life, 643 attained fair success, 57 made fortunes, 27 died from intemperance and other vices; 96 failed entirely; and 3 committed suicide.

Use hydrate of chloral for your very nervous patients, about fifteen minutes before you operate. Give them from 20 to 28 grains in an ounce of water. It acts like magic.

He is a wise dentist who knows his own teeth.

Ambrose Paré was the first to scarify the gums in difficult dentition, making his first experiment upon his own son.

Dentists are scarce in China; their fees are very high; and a man in Canton with the toothache would have to go to Hongkong for a remedy. "It might," says the British consul, "cost one of the community a total sum of between 20*l.* to 25*l.* to get a single tooth stopped properly."

Old advertisement curiosity—The reader will not peruse without interest the following specimen of curious advertisement of olden English times bearing date 1786.

Martin Van Butchell, Surgeon Dentist, attends at his house in Upper Mount street, Grosvenor square, always from 10 till 4; open till dusk. Advice £1 1s; taking out a tooth or stump £5 5s; a whole under row, £42; upper row, £64; an entire set, £105. Natural teeth, £10 10s each. No transplanting. No annual patients. N. B. The money paid first.

A colleague of ours has a nice way of administering consolation preparatory to extracting a tooth. "Sit a little higher up, please, *and you'll be more comfortable.* Just a little higher, *and you'll enjoy it all the more.*"

Use holly strips for polishing gold filling in approximal cavities.

THE CANADA

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ORIGINAL COMMUNICATIONS.

FATAL CASE OF CORROSIVE ULCER.

By CHARLES P. LENNOX, L.D.S., Chatham.

By the following report of a fatal case of corrosive ulcer, I wish to impress upon the minds of all practising dentists the fatal consequences which may attend an operation improperly done. In this case, however, the trouble originated from a bad fitting plate, but as like fatal results may, and do follow other dental operations, our duty lies in effectually accomplishing all we undertake professionally.

Three weeks ago I was requested to visit a lady suffering with alveolar abscess. I found her in great pain with it, face much swollen. The flesh was sloughing off from the alveolar ridge and roof of the mouth, so as to leave bare the bone from the centre of the hard palate to the external side of the affected alveolar process; pulse one hundred and fifty; two natural teeth extracted easily with the fingers, showed no decay of the crowns.

About ten years ago while in California, a partial denture on rubber plate had been fitted to her mouth, which, in consequence of not fitting properly in the region of the natural teeth above mentioned, kept up a constant inflammation of the mucous membrane, causing the gums to recede from the necks and roots of the teeth, and finally ulceration at the roots. Three years ago she called at my office to ask some questions regarding the case, but had nothing done, promising to call again. She retired to her bed about four weeks ago with severe pain in the side of the face, intending to visit the dentist the following day, but was confined to her room until her death, which occurred in less than two weeks, subsequent mortification having taken place. She was under the treatment of Dr. Flemming of this place, by whom I was requested to see her.

ALUMINUM AS A BASE FOR ARTIFICIAL DENTURES.

By G. V. N. Relyea, L.D.S., Belleville.

Having frequent communications from dentists in relation to the aluminum work, (as to my opinion and *modus operandi*), and having had some considerable experience in that line, I purpose in a very brief way to give my system of mounting, and my reasons why I consider aluminum preferable to rubber, gold, or even continuous gum work. It must not be supposed, however, that I have any thing new to introduce; on the contrary it is the old system of swedging and then attaching the teeth with vulcanite. The clasps can be attached in the same way. I may say, however, that I never perforate, but simply serrate, as it does not weaken the plate, and the rubber does not show on the under side.

Aluminum is better than rubber because it is stronger and can be made as thin as gold. It is preferable to gold, for the following reasons: First, there is less labor in putting up a set; second, there is no danger of the plate warping, which it will do more or less in all cases when all gold is used; third, it can more readily be kept clean; fourth, it is smoother to the tongue. Continuous gum work is unquestionably the most beautiful style of artificial denture, ever made, but it is unavoidably heavy; there is the same danger of warping as in gold work, it is more readily broken should it drop and infinitely more trouble in repairing.

Whatever merit rose pearl, or more properly Pyroxyline, may possess it is in its present state too tedious, complicated and uncertain for general use. Finally, there is unquestionably nothing hitherto used that will give a better fit than the odious rubber, but in this particular feature combined with its exceeding cheapness centres its whole merit. I do not use aluminum exclusively, nor to any very great extent, but where strength is required I find it the best and most reliable adjunct that has yet come into my way.

FINGER PROTECTOR FOR USE IN ANÆSTHETICS.

By J. Lauder, Dental Student.

This little contrivance suggested itself to me, as a useful finger protector and assistant during the administration of anæsthetics, when there is so much muscular resistance of the lower maxillary that great difficulty is found in depressing it to make room for the forceps.

The ring is made of silver, to fit the forefinger of the left hand, half an inch in length from the tip of the finger; a lip is added to prevent slipping. It may be used by the operator or assistant. It affords great

strength to the finger to depress the jaw, and protects it from a bite. If the patient should grip your ring, and you wish to withdraw it, simply turn it so as to bring the lip to one side, when it may be withdrawn "in spite of the teeth."

A FEW THOUGHTS ON AMALGAM.

By Chas. Harding, London, Eng.

Of late years there has been so much improvement in the manufacture of amalgams for filling teeth, that they have become more popular in cases where gold cannot be used to advantage, and the most eminent practitioners in all parts of Europe use amalgam for their best as well as poorest patients. I do not refer, of course, to those impure and filthily prepared combinations which earned for any amalgam, however good, the unreasonable opposition some years ago in the United States. There is as much difference between a properly prepared amalgam and these dirty preparations, as there is between pure gold foil and gold foil adulterated with lead, and, while believing that we should always use gold when we can, the practice of respectable dentists, for twenty-five years, will bear witness to the usefulness of amalgam, when a soft plug is required. In this connection I might say, that in judging of amalgam, it is erroneous and unfair to do so by the work of quacks. Let us take its history under the manipulation of honest men, the only fair way to judge any material for filling teeth.

The charge of "salivation" from amalgam is held in Europe as mere assumption, and I would advise looking beyond it, in diagnosis where amalgam is present in the teeth. Recently I had a patient, aged 29, who came to me, and accused amalgam, I had inserted three years before, as the cause of ptyalism presented. "My dear friend," I said, "tell me how long is it since you were treated for syphilis, and what quantity of mercury did you swallow." That person collapsed.

One point strikes me of importance in securing a clean face to amalgam, and smoothness of surface at the edges of the cavity. In the first place, the edges should be as carefully smoothened as if gold is to be used, and the entire preparation of the cavity done as thoroughly as possible. The cavity should be carefully dried and kept so during the plugging; the silver and tin should be ground fine in a mortar after being filed, and washed in salt and water, and dried, then washed again in alcohol and dried in the sun; the mercury should have no sediment. I always purify mine by distillation of the red oxide. The amalgam should be made in a small mortar, and after being well rubbed together, the excess of mercury should be squeezed out,

and the preparation washed several times in salt and water with the pestle and the finger, and washed again with alcohol; then squeeze out as much more mercury as possible in a chamois, with flat pliers, and cut into small cakes to use. After the filling is in, rub its surface hard with a burnisher, and then finish by drawing a dry mouth napkin across its face, in one direction; if the mercury is well squeezed out, the surface of the filling will present a clean frosty appearance; and if the materials are pure and have been thoroughly washed, it will keep comparatively clean in almost any mouth. Her Majesty the Queen has had teeth filled with amalgam, by her state dentist. I do not mention this to prove that amalgam should always be used, but to prove that it can be used where gold cannot, and that if it is ever good in the case of a patient who can afford to pay for gold, surely it is a blessing to those who are poor.

ANNUAL ADDRESS DELIVERED BEFORE THE QUEBEC DENTAL SOCIETY.

BY W GEORGE BEERS, L.D.S.

Mr. President and Gentlemen,—An address, or an essay, without an apology on such an occasion as the present, would be much like a book without a preface,—both having become so customary; but as my excuse is not for neglecting the duty appointed to me in preparing the annual address, but an apology for not doing it well, because of personal inability and lack of time—having been compelled to defer it until the eleventh hour—and fully realizing the difficulty of the position, I trust you will extend to me your most lenient consideration.

I think we have good reason to regret that this first annual address was not assigned to one older, who could better have taken us back to the early history of dentistry in Canada, and traced its progress down to the present time in all its various stages. It would be a matter of deep interest, and more than local interest, to know something more of the early practitioners, their manner of working, and the facilities they possessed. Small as the sphere was for dentistry in Canada a quarter of a century ago, there were a few men whose names are known beyond our borders for their contributions to dental science, and much of whose work we find existing intact to-day in all its excellence and honesty. Spooner, as the discoverer of arsenic for destroying the dental pulp, was a Montrealer; and while the more conservative principles of the present succeed in saving hundreds of pulps which formerly were ruthlessly destroyed, the discoverer of arsenic served his generation, and has left his "foot-

prints on the sands of time." Logan and Rahn, of Toronto, won high reputation for the excellence of their operations, and both were induced to go to England, where they amassed large fortunes, and rose to eminence in their profession. W. H. Elliott, of Montreal, had no superior on the continent as an operator and a gentleman of high mechanical and literary abilities, as his contributions to American Dental journals bear witness, and the great number of his inventions and improvements. I regret that I am not able to speak of the old practitioners of Ontario: and in this place I cannot omit to pass over the names of Dr. Bernard, the oldest living practitioner in Canada, and who is still in harness vigorous as ever; Drs. Baillargeon and McKee, of Quebec,—the latter of whom was the first Canadian dental graduate, and Dr. Webster, of Montreal, who was the first man in this country to administer ether and then chloroform. I reiterate my regret that I am unable to do justice to this subject, and trust that Dr. Bernard will favor the society some day with a history of his early contemporaries.

Long after the profession in the United States had emerged from the selfishness of its dark ages, dentistry in Canada continued to lag along in the old style; pupils were indentured in a solemn formality enough to make an armadillo quake; and, in some instances, the innocent student was bound over not to open an office on his own account within a hundred miles of his preceptor, nor to reveal to rival dentists the "secrets" he might learn in laboratory and office. Receipt books—then more valuable than now, because of the secrets which had to be purchased, and the illiberal feeling existent—had locks, and well typefied the narrow-mindedness of the early times. Ways of working were more important secrets than one's bank account, and the personification of repulsiveness was to be met when one ventured to advocate co-operation, association and reform. A miserable exclusiveness pervaded the mind of practitioners, and some few who made attempts to bring about a better state of affairs met with discouragement and opposition. No doubt the idea of legislating was often discussed in conversation, and everything *we* have done was probably anticipated by our predecessors who lie under the sod; but what was desirable was not possible, and the early history of our profession showed no prospects of change;—a history which, we trust, will never repeat itself in our Dominion. In 1842, however, Dr. Bernard did put forth an effort, almost simultaneous with the passage of a law in Alabama recognizing dentistry as a profession and regulating its practice. At that time a medical bill was before the Legislature, and Dr. Bernard endeavored to have a clause inserted in it to regulate dental practice. Nothing else was done towards legislation and association, until the noble efforts

made by our friends of Ontario, when with hard fighting and commendable zeal, they organised an association, obtained an act of incorporation, and won for dentistry the legal right to be called a profession. Ontario and Quebec now possess laws which mutually protect the public and the profession; and let us trust that the local legislatures of our sister Provinces will at once awaken to a sense of the great need and importance of incorporating the dental profession of their Provinces, and so extending the advantages we, in common with our community at large, enjoy.

It has become an intelligent principle to measure the standing of every art and science by its growth with the times. Geology has outgrown the guesswork of Pythagoras, and newly discovered "sermons in stones" illustrate the history and development of the globe, and testify to the truth of scripture. Any schoolboy of the present day may intelligently ridicule the superstition which clung to astronomy in the time of Copernicus; briefless barristers may pooh-pooh much of Lycurgus; first year medical students may sneer at the vagaries and therapeutics of Celsus; dental pupils pity the pulp-slaughtering practice of Spooner, and even criticise the largest part of the early editions of Harris. An infallible law exists with regard to all science and art, which, like that of the mutation of races and tongues, preserves the true or removes the imperfect, according to their development. As in the animal kingdom, genera and families disappear after having fulfilled their time, and become transmuted and further developed in others called more perfect, so through a series of progressive developments, an imperfect principle in science is the forerunner of one of perfection and truth, and scarcely leaves a vestige by which we can detect its origin. Old speculations and practices which once were revered, are thrown away like the key of Garengeot and the invariable principle of extraction in chronic alveolar abscess; the text books of Maury, Jourdain, Hunter, Bell and Harris, are no reliable guides, and many names once honored as almost inspired, are now recalled with more curiosity than awe.

One is naturally disposed to magnify the importance of any occupation in which he is engaged; and it seems to me, that if there is an exaggeration which should be excused, if not commended, it is that of the man who over-estimates the value of his own profession, and who, therefore, esteems it paramount to all others. To think highly of one's self is not at all identical with thinking highly of one's labor—indeed there is nothing more diverse: and I conceive that the growth of dentistry and its present position as a recognized branch of medicine and yet an independent and distinct profession, entitles us to have its claim respected. Take it theoretically and practically in all its constituted

branches, operative, mechanical and surgical, since the time of Hunter, or even Harris; look at the advancement in the diagnosis and treatment of certain diseases of the teeth once deemed incurable; the progress in difficult operations on the teeth; the application of delicate and complicated apparatus for cleft palate, fractures of the jaws, &c., which once was hardly within the sphere of the dentist at all. Look, too, at the catalogues of our manufacturers; the improvements made in instruments; and were it possible to resuscitate the early dentists and lead them through the dental depots, would they not have good cause to regret that they had been born so soon, or progress had commenced so late.

Not only have invaluable discoveries been made by members of our profession in the natural laws which govern the various phenomena of absorption and reproduction, the physiology and pathology of the teeth and their adjacent structures; but enough has been done in the operative and surgical within the last twenty years to distinguish dentistry as a scientific profession, needing for its faithful practice a high degree of medical and mechanical tact and knowledge.

We have hardly yet begun to realize the personal, professional and public advantages accruing from the improved state of affairs in the Canadian profession. Personally, every dentist who chooses to respect himself, holds a position in society as a professional man,—a position he could not legally claim and which was not generally recognized before the passage of our Act of Incorporation. The privileges granted to physicians with respect to their accounts have been extended to us, while before the passage of the Act, we had to swear to our work and cost of material, like a mason or plumber. Before the passage of the Act we had no protection from the raids of nomadic empyrics: to-day they are completely shut out. We have also this organization, and other educational advantages, which reflect credit on the profession, and benefit every individual who chooses to avail himself of their inducements. Dentistry is no longer regarded as a trade, and education is no more confined to the laboratory. The character of the profession is raised by the better education of students, the existence of an examining board, and a license to spur ambition and stimulate study. By compelling our members not to take students for less than three years, the manufacture of dentists in as many months has been stopped, and the education in the office is more thorough.

The influence of these societies is also irresistible, centralizing professional experience and action, dissipating errors of practice, blending sympathies, and stimulating to earnest study, to observation and experiment. Pre-eminent above most direct influences is that of association,

where every one is a worker to the best of his ability. It is not at all rare to meet excellent operators who are not ashamed to confess, that they had practised for over twenty and thirty years, and had never known as much about filling teeth, as they learned from a few clinics and discussions in such a society as this. Books only go a certain length. In a discussion or at a clinic, we see *demonstrated* principles which are never half learned by reading; we have no excuse for misunderstanding a knotty point which a question may settle. And here, let me urge the need for clinics. They are indispensably necessary to compare our different methods of practice effectually, and as important as bed-side lessons to the medical student. Not only in filling, but in diagnosis of diseases having relation to the teeth and adjacent structures. A natural sensitiveness exists among many—the fear of being thought ignorant of some points of our profession. This should be put away, and each one feel that he is here on the scent for knowledge; that our interests are identical, and that while agreeing to disagree when we conscientiously believe our different methods to be the true, that we will not let our shades of difference lead us to dogmatism, but that we are willing and anxious to let them be tested and moulded by the touch of truth and philosophy. If we are at all sincere in the progressive movements in Canadian dentistry, it is impossible to be misers of our talents, or to be ignorant of the best means for giving our knowledge to our *confrères*. The sooner poor operators become good, and quacks reform, the sooner will dentistry command more general respect, and cheap dentistry, show cases and boasting advertisements go to the wall. Our profession in this country will become just what we make it. It is our prerogative and duty to foster its dignity and honor, and so to weed it of everything disreputable, that in our "sere and yellow" we will have reason to be proud of the retrospect, and that those who come after us—possibly our sons—may have cause to feel grateful for our labors.

There is one point I would like to touch upon, but very briefly; that is, the education of students in the office. With the present opportunities for education, no one who can, should miss attending a dental college; but the education of students in the office—and some cannot manage to attend a college—should be much more thorough in the operating department. It is a reproach that some of us should have to say "I never saw my preceptor fill a cavity, nor was I ever shown how to prepare cavities or diagnose disease." I would also draw attention to the necessity for continued self-study and reading. No intelligent man dare despise the importance of quiet study. The cost of a cultivated and highly educated professional man is immeasurably greater than mere

money can obtain. It is the purchase of long hours and years of reading and reflection, theory and practice.

The importance of anatomy is evident, that we may understand the structure and formation of the body we treat; physiology, that we may understand the natural functions and duties of each part, their origin and development; pathology and therapeutics, that we may recognize the departures from the normal condition and the remedies to be used; chemistry, mechanics, and, indeed, even the collateral sciences. The more conservative dentistry is made, the closer must it be allied to medicine.

You are aware of the suspicion and slander cast upon our early efforts by a few men in our ranks, and echoed by a portion of the Montreal press. Nothing was too bad to be said of our Society and the Board of Examiners. We were told that we had carried reform to the verge of tyranny, and were combined against liberty and justice. But what is the result to-day? Did our act do anything for us that it did not do for those who opposed or ignored it? Does the Board of Examiners and this organization do no good for society in diffusing dental knowledge, in improving practice, and elevating the condition of an important profession of which the public could not well do without? And may I ask those few who accuse us of selfish motives in organizing the society, what personal interests can any one of us here serve by coming to these meetings, and revealing any good method of practice we think we possess. If selfish motives influenced us, we would better serve them, by refusing to attend here, and by following in the steps of our fathers.

With respect to the great bug-bear, quackery, time will, I am sure, rid the profession of much of the sham and imposition practised by some calling themselves dentists; but we have the remedy in our own hands, and that is, to educate the public. The task of reform in dental practice devolves upon us; and our opportunity is afforded in our surgeries, in our work, and in our press. Quacks will exist just as surely as weeds will grow, but neither quacks nor weeds should be spared. Unless the practical plan of Alphonso of Castile for regenerating mankind—to kill nine out of every ten—were adopted with empirics, they will be found, and our best remedy is to cultivate a public sentiment opposed to show cases, flaring signs and advertisements, and to educate the people to judge of a respectable Dentist as they would of a physician,—and we know our leading physicians,—the men who are to be trusted, do not hang out catch-penny sign-boards, or rival a Barnum in the humbug of their advertisements. Let us make the profession respectable. It can never be truly scientific and not respectable. A dentist who acts against this

principle is an enemy to the profession: his honour is in his pocket and his reputation will not survive.

And now, gentlemen, I must bring this paper to a close, trusting that each one of us will endeavour to uphold the conservative character and respectability of the profession. Let us have a higher conception of it than as a mere means of sustenance; let us have our ideal of excellence far beyond, to what, perhaps we can attain; being more afraid to teach than to learn, and guiding our practice by the thought from the old Chinese philosopher Confucius, "What you know, to know that you know it, and what you do not know, to allow that you do not know it, that is knowledge."

Thanking you for the attention you have paid to my very imperfect and hastily written paper, I only trust that I have, at least, not quite wasted your time.

A LITTLE HINT.

BY W. G. B.

Several times I have been vexed with an upset of my bottle of carbolic acid, and as I use it a great deal, preparatory to putting in the gold in sensitive cavities, &c., I always have it at hand. To prevent unpleasant results from upsets, I now simply fill a small wide-mouthed bottle with cotton wool, and pour in sufficient creasote or carbolic acid to be absorbed by the wool. There will be more than enough to wet a pledget on the point of an instrument, and not enough to be spilled in case of an upset. I think I got the idea from Professor Atkinson.

PROCEEDINGS OF DENTAL SOCIETIES.

QUEBEC DENTAL SOCIETY.

A regular meeting of the above society was held in Quebec city on the evening of November 8. Dr. Webster in the chair.

The annual address, as appointed, was then read and asked for publication. After which, the election of officers took place,—the elective officers of the Board requesting to be relieved from active office while holding positions on the Board.

President—H. D. Ross, Quebec. First Vice-President—J. H. Webster, Montreal. Second Vice-President—E. Lefaivre, St. Johns. Secretary—W. H. Jackson, Quebec. Treasurer—Dr. Baillargeon,

Quebec. Executive Committee—Alloway, Fowlin, Fiske, Leblanc, Nichols, Venner and Matthieu.

A "discussion" then took place on "Professional fees"; but, as it was so excursive and conversational, we cannot attempt to do anything like justice to most of the speakers.

W. G. BEERS said he considered the subject of importance to the profession, with a view to obtain uniformity if possible. He considered good dentistry very badly paid in Canada; and that "cheap dentists" were overpaid, because people cannot "buy five dollars worth for one dollar" and not run the risk of being cheated. If we consider dentistry a mere trade, then let us agree to work for as little over cost as the shoemaker who makes our boots; but if a profession, let us charge for our brains, our previous and continued study, and the sacrifices of comfort and health itself we are forced to make for the convenience of our patients. He did not believe in extortion, of course, and thought that the fabulous prices obtained in some parts of the United States by some operators were out of all reason; but we are fairly entitled to better prices than we now receive. He would propose a provincial fee bill, similar to that adopted by the medical and legal professions.

C. BREWSTER held the opinion that the best class of work was the worst paid, because it is the work of skill and study, while cheap dentistry invariably is done by incompetent men. A dentist might prepare and fill the same cavity with gold in ten minutes, as some do, or in an hour and a-half as others do, and the patient, in many cases, might know no difference in the quality of the operation. He did not believe that cheap dentistry would have a much longer lease, as people are being educated up to a higher appreciation of the profession. He always made his charges just as he pleased, and was not at all persuaded to depart from them, by any consideration of what others charged. He approved of a provincial fee bill. Thought it would educate the public up to our prices.

H. D. ROSS considered that we should not stipulate before hand as to prices; but that when an operation is finished, the charge should be made according to the time occupied and the difficulty of the operation. Low rates of charges are always associated with inferior talent and inferior work.

W. R. PATTON was strongly in favor of raising our prices. For a filling done in Canada just as good as in the United States, well-off Canadians will grumble at $2.50 where a "Yankee" pays $10 and $25, because the latter appreciates his teeth better than Canadians, and would no more think of having a tooth extracted because it is decayed, than a finger cut off because of a whitlow. Thought there should be a provincial fee bill.

E. LEFAIVRE was in favor of regulating the fees, but it was impossible to adapt those of the city to the country. When he first opened business where he now is, travelling dentists had been charging less than one dollar for gold fillings—often fifty cents!—and anything they could get for artificial teeth. He found it difficult then to induce his patients to pay him one dollar and a-half for small gold fillings. He had found the printed fee bill of the Montreal dentists of great use to him. When any of his patients threatened to go to Montreal to get their work done, he showed them the bill, and said "Look what you'll have to pay in Montreal." A great many Canadian farmers and others near the border lines, go to the United States to get artificial teeth, and generally are swindled by travelling quacks.

J. H. WEBSTER thought a provincial fee bill, sanctioned by this society, would be more likely to be observed and respected than one got up among the dentists of one city. He would not advocate going below two dollars for small gold fillings. In mechanical dentistry, would charge according to the circumstances of the patient. He never found any benefit from doing work cheap. It was just such work that gave the most trouble. The Canadian people have been all along getting their dental attendance so low compared to the United States and England, that they thought dentists should not advance their fees, while every other profession and every branch of trade have raised their prices with the increase in the cost of living.

W. B. MCGOWAN said he found it impossible to get respectable prices in the country, and that people living some distance from his office would not come a second and third time to have teeth filled. He was compelled to do work lower than he deemed fair pay, or not work at all.

W. H. JACKSON favored the proposed fee bill. It was only natural that we should not care to labor for next to nothing, and also that a fair fee would induce the operator to aim at greater excellence. It was important to educate patients to understand the difference between the operation of a good, and a quack dentist. If they properly understood this, they would hesitate about patronizing "cheap dentists."

R. A. ALLOWAY found the Montreal fee bill very useful, and believed it could easily be extended to other parts of the Province. It would no doubt be difficult at first, but time would bring the profession the justice in this respect it deserved. A provincial fee bill would have more weight than a local bill.

T. A. VENNER did not believe every one would adhere to the proposed bill. Among the French Canadians, two dollars can seldom be obtained for a gold filling.

W. G. BEERS blamed some of the French Canadians dentists of the cities for cutting down the fees. The leading French Canadians admitted this. These dentists did bad work for low prices, and, worse than all they degraded the profession by extracting hundreds of teeth which could be filled, for the purpose of inserting artificial substitutes. We do not charge for *advice*, as a general thing. We should do so, because we often gave advice of as much value to the patient as an operation. When there is occasion to be cheap, and work for half value, there is occasion to be charitable, and to do it for nothing.

H. D. ROSS thought a fee bill would stop a good deal of shopping. We should feel that in regulating the fees, we are not only doing justice to ourselves, but raising our profession above the trade level to which cheap dentistry tends to lower it. No man who has properly studied his profession will be inclined to do cheap work.

After some further discussion, it was understood that the dentists of the several cities and towns should draft a fee bill to which they know they can adhere, and that the matter of a provincial bill should be settled at the next meeting.

"*Mechanical Dentistry.*"—Owing to the lateness of the hour the discussion was necessarily very short, and only got as far as "taking impressions."

J. H. WEBSTER described his manner of taking impressions: used plaster. To displace an impression he passes a small instrument through a hole in the centre of the cup.

R. A. ALLOWAY uses a quill passed through a hole in the cup, to displace impressions. Takes impressions in wax, and frequently in wax and plaster. With plaster he places the forefinger of the left hand in the centre of the cup, and while pressing upwards, taps the handle gently to equalize the flow of the plaster and to adapt it better.

E. LEFAIVRE does not believe that there is any appreciable expansion of plaster in setting. Uses solution of castile soap to varnish plaster impression.

W. H. JACKSON uses wax and plaster for impressions for full sets; taking wax first, trimming off, and pouring in plaster on the wax. Where there are teeth uses plaster only, because if an impression is taken in wax, and plaster poured into the wax, it cannot be removed without more troublesome breaking of the plaster.

H. D. ROSS uses wax, taking out first impression and trimming off surplus, and after touching the sides with oil to prevent it adhering at these points, he puts it in again, spreading it laterally, then pours in plaster. To displace it, makes patient cough.

W. R. PATTON uses plaster altogether; does not think plaster expands when dry. There is more trouble with wax than plaster for impressions.

W. G. BEERS uses both wax and plaster. Where the teeth are fan-shaped, narrower at the necks than crowns, and the impression must inevitably draw if of wax, or be difficult to displace if plaster, has narrow strips of tough wax which he adapts around the necks, making the sides perpendicular, and trimming off flush. Before taking the impression he always oils these teeth and the wax around them, and then trims off easily on the model. Sometimes he has oiled the whole surface of the wax in the cup just before putting it in the mouth. Prefers plaster for the majority of cases.

W. B. MCGOWAN begged to divert from the subject of impressions to refer to a new idea now used, viz., making the entire palatine surface of soft rubber, or using a flexible rim around the edges of both upper and lower plates. He believed it was patented in the United States. He had seen several sets made in this way.

[N. B.—We hope to be able to publish this "secret" soon.]

BOARD OF TRUSTEES AND EXAMINERS OF THE DENTAL ASSOCIATION OF QUEBEC.

A regular meeting of the above corporation was held in the city of Quebec, on the 8th and 9th of last month. The following members were present:—Drs. Baillargeon, McKee, Ross, Webster, Brewster, Lefaivre and Beers; Dr. Bernard, the President, being unavoidably detained in Montreal, by urgent business in connection with municipal matters of the greatest importance to his constituents.

Dr. Baillargeon occupied the chair.

Minutes of former meeting were read and confirmed.

Applications for licenses were read from Messrs. De Martigny, of Varennes, and McGowan, of Frelighsburgh, both of whom were received for examination in Dental Anatomy, Physiology, Chemistry, Surgery, Pathology, Filling Teeth, Mechanical Dentistry, Irregularities and Anomalies, Anæsthetics and Hygiene.

Report of Treasurer was read: Messrs. Brewster, Webster and Beers appointed auditors.

The report of Secretary was read.

The following resolution was passed:—

"That after the 1st of January next, all parties practising Dentistry in this Province without license, be prosecuted."

A notice of motion was given to reduce the price of license to $20 for those dentists now practising in this province, who are graduates of recognized dental colleges.

The candidates were examined to-day exclusively in writing.

November 9.

The verbal examination was held this morning; and the two candidates were unanimously granted the license of the board. Dr. Baillargeon, in presenting the parchments, took occasion to address each candidate, giving them some very appropriate and useful advice, and urging them to uphold the honor of the profession, by improving themselves in every possible way, and always esteeming the license they had obtained.

After the discussion of some miscellaneous business, and a decision to hold the next meeting in Montreal, in May, 1871, the meeting adjourned.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

[Continued from page 22.)

American Dental Association, Aug. 4, 1870.—Prof. Knapp read a paper on "Cylinders—the method of making and using them."

He recommended the operator to provide himself, for making cylinders, with a desk having a velvet top, a box divided into small compartments for holding different sizes of cylinders, an ivory paper folder, a Swiss broach, upon which to roll the gold, the end being broken off and sharpened, and a pair of foil shears.

He had used many numbers of gold, from 2 to 30, but preferred Nos. 4, 5 and 6. When very large and long cylinders are needed, an entire sheet of No. 4 may be used; but for smaller, the sheet is cut into strips before folding.

To fold into strips or tapes, he first lays the piece of gold of the size required upon the velvet-covered top of an ordinary writing desk, and then indents with the edge of the paper-folder, and folds gently. The tape is then placed on the inside of the forefinger of the left hand, the hand being turned with the palm up, and the end of the strip almost to the end of the finger. The broach is taken up by the right hand and laid upon this end of the tape, and the gold rolled upon it by closing down the thumb of the left hand and drawing it backward toward the first joint of the forefinger. The rolling of the cylinder is completed by twisting the broach, thus once started, with the thumb and forefinger of the right hand. For very short cylinders, the tapes may be made by folding the sheet of gold and then cutting into very narrow strips

with the foil shears. When the rolling of the cylinder has been completed, a few more turns may be given with the nail of the left thumb pressed against one end of the cylinder.

Some cylinders may be made larger at one end than the other, by folding the tape so that one of the sides is the thicker. For filling pulp canals, the breadth of the tape is made almost equal to the length of the canal, and one end is folded to within a short distance of the other ; then the end which has been made by the doubling is carried nearly to the end first folded down. This doubling up of one end is continued until the length of the canal to be filled is obtained and the gold presents a series of slight steps, the first being the thickness of the tape, the second double, the third quadruple, the fourth eight times, and so on, duplicating. The broach is then put on at right angles to these folds, and the whole is rolled into a tapering horn with the smooth sheet of tape outside and the doubled steps inside.

The method of filling consists in closing up the crevices by small cylinders stood on end, and then arranging others parallel with these around the walls, so that the ends project out about one-third of the whole length of the cylinder. They are flattened and partly condensed against the walls by lateral pressure. Others are then placed around within these and similarly worked. The largest are rolled soft and used first, while the small hard ones are for finishing, keying all together in the small holes pierced by longitudinal pressure on the cylinders with wedge-pointed instruments. He found that he must have instruments with points to go over and over again every part of the cavity. Where a cavity is irregular, he tries to make it simple. On the approximal surfaces of bicuspids he can get the best filling with cylinders, but where there are irregular walls he uses soft foil or adhesive gold and mallets.

Prof. BOGUE said: Under the head of Operative Dentistry we may consider some points—how our operations may be made neater by keeping our fingers and nails clean, by avoiding the use of them in our hair, etc., napkins should be kept in order, instruments clean and polished. It is not to be doubted that cylinders will make a most perfect filling in many cases, and the microscope will demonstrate that. There are, however, some cases where crystal foil or gold is needed. *Teeth must be filled with judgment as well as gold.* He would no more abandon cylinder fillings than rubber dam. We must use all kinds, as the case requires.

Dr. MILLS. It was an important matter that we should pursue our practice without prejudice, and simply for truth. We should spend more time, and examine closer into the preparation of the cavity for filling. He would as soon think of abandoning the rubber dam as to attempt to

fill with cylinders, but has been much pleased with the views advanced. He thought much could be learned from simple cavities. The principles underlying filling must be studied, and difficult cavities reduced to simple ones. He has been trying to reduce the number of instruments as much as possible. He has used many to learn, and he thinks here is another governing principle. He has come down to a few, which he finds valuable. Varney has presented thirteen; he takes out about four and gets along just as well as he did with all. His nervous temperament makes him try many; as to the form of cavities,—the walls almost perpendicular.

Dr. CORYDON PALMER. He desired to show how everything pertaining to the mouth may be made use of in practice. Every fissure in a tooth filled should be marked and the charge made immediately after the patient has been under the hands of the operator; they are both better able to judge of the amount of force expended, etc. He divided the mouth into four divisions.

First, he exhibited a drawing of a head divided into four by a perpendicular and transverse line; this gave an upper and lower right and left division. In making a record it is well to know how to note this,—L. Sup., L. Inf., R. Sup., R. Inf. divisions.

Second drawing gave the teeth, thirty-two in number. Commencing at central incisor, he numbers backward to eight; in this way he has the teeth of the four divisions described by numbers; thus, the lateral incisor is No. 2, cuspid 3, and so on to wisdom tooth, No. 8. The teeth thus become better known by their numbers than by their names. By the shape of the mark made he knows the kind of filling, and the position on the tooth by its relative position on the number designating the tooth.

Almost every dentist has some sort of short-hand or way of abbreviating a description of the operation. The time to make these marks or memoranda is immediately after completing the operation. Demonstrations then followed. He said that he was sorry to see so much time wasted in making pellets, cylinders, etc. They are filled with animal matter from the hands; while pressing and squeezing them in, spring the cavity in the tooth, and cause a constant antagonism between the attempt of the filling to escape and the tooth to retain it. Since 1860 it has been demonstrated by our prophet that a tooth can be built up, with all its cusps and fissures; yet there are some who will yet crowd gold into a cavity. No first-class operations can be made if the gold is handled, with the fingers. In using soft foil, it don't make so much difference how you fill, so long as you can put it off; but in ten years or so take it out and it is offensive, and the animal matter in it will burn.

You need not fear cutting down crown surfaces or fissures, for with adhesive gold this may all be replaced. Make the cavity thoroughly open, and put a mat upon the bottom; then build up, packing toward the walls. This is first class, and anything short of it is short of the highest attainment in our science. It has been stated here to-day that the cylinders make the most perfect and solid fillings. It is not true,—they will not do. Begin and build up solid from the bottom. Do not object to the heavy foils, but with No. 4, if you have proper instruments and operate correctly, you will obtain good results.

You must understand how to have your instruments right, and encourage our manufacturers. What is one or two dollars for an instrument? The difference of a line will make an instrument unfit for use. Just pay them to put the talent in it; have the serrations fine. It is most essential to have a fine point. Don't put the instrument on with a nervous force or jerk, but steadily, and press it down, holding it tight; then with the lead mallet strike a following blow, and let it not spring off; this vibration is what hurts the tooth. You strike with a steel mallet, or wood, or bone, etc., and bounce it off, but with the lead you hold the instrument until after the blow dies away.

In a recent case of atrophy with ridges and pits, I used the rubber dam and immediate wedging; had an 8-oz. mallet and very light instrument. The instrument should be in length in proportion to its size, and all according to what you may wish to do. With regard to mallets, I have a band of iron made, united with hard solder, and run the lead into it for a head. The making of the gold foil is confined to the manufacturer. We know there is a difference between adhesive and soft foil. I want that with a beautiful, bright, metallic surface. One-third of the value of gold is destroyed by pressing it in a screw-press, leaving the mark of the paper upon it. To use it I cut the foil, let it fall upon a napkin and roll it up with that. This roll is cut in pieces or attached at one end, and then built around. For annealing, the tube of the lamp should be made of platina or glass, so as to have a flame free from oxides. Be careful of the match, as the phosphorus may injure the gold.

I will describe how I filled a left superior lateral incisor, where one-fourth of the labial wall was cut away to get at the cavity. Get a perfectly smooth and straight labial wall; do not bevel it at all. This is done to have it strong. It may be started with a small chisel,—let it be strong and sharp. Then use a file to prepare the edges; get margin or edges all right; proceed until the cavity is fully prepared; with a fine drill, make a small retaining-point, or make little grooves. It is astonishing how much little pits will help to retain the gold. The rubber dam

is indispensable; you will come short of making a first-class operation if you do not use it. Put little hooks in the corners of the rubber, and attach to strings carried over the ears, to hold the dam up out of the way. He said that he divided the finishing of a filling into six stages:—first, filling; second, scraping; third, stoning; fourth, polishing with fine pumice; fifth, polishing with fine chalk; sixth, burnishing. He cautioned all to be sure and wash off the filling well with soapsuds before burnishing.

Dr. MILLS thinks the best excavators are the three-edged; he received from Dr. Brockway, of Brooklyn, N. Y., an instrument that is a sort of scoop; this is very generally useful; it does away with burs. His manner of filling teeth is now to wedge immediately. A short time ago he went back to separating by rubber. The main stepping-stone to success is the preparation of the cavity. He uses two excavators, a scoop and a file, to finish edges. He wants perpendicular walls. He has used many kinds of gold, but now prefers adhesive. He uses foil, mostly Nos. 8, 10, 15, 40, 60, and 120, preferring Nos. 15, 40, and 120. He makes slots for retaining-points, and commences with heavy numbers, as they retain better and stronger. The heavy foils, he thinks, produce a better class of work, but require more care in packing. He thinks that if fillings were hollow, but the walls well adjusted, they would be better. The packing of gold around the surfaces and margins of the cavity, he thinks well of. Sometimes, in turning over the heavy foil, or folding, it makes a corner, and some object to it. He practices burnishing or beating the edges of the tooth and the filling, bending all down solidly. When he says "beat," he does not mean a heavy or brutal hand,—it can be done with heavy pressure. In using the mallet, it should give the blow in the direction of the axis of the tooth. He has had cases where the mallet could not be used.

Prof. KNAPP is no advocate of any extensive use of cements, but believes they may do well in some cases. He would not call attention to anything but a wash for cements; it is the *Liquor Sodæ Chlorinatæ*. It is a deodorizer and alkaline, quickly removing all odor or smell from the hands. It gets rid of the oxide from cements. Equal parts of water with Labarraque's solution first, and finally washing repeatedly with alcohol, cleans the amalgam very perfectly.

Dr. DICKERMAN, in bleaching teeth, removes all of the carious portion of the tooth, and dresses with camphorated spirits for two or three weeks. If it is advisable, lines the cavity with oxychloride of zinc. A tooth is not dead so long as it has any attachment, and it may be restored to usefulness even when this is very slight. Abscesses that have been

discharging from one to twenty-seven years have healed. We then find cartilage formed. With regard to gold, he had seen teeth filled with from No. 2 to 640, or No. 20 doubled 32 times. Good fillings may be made with all numbers.

Dr. FORBES. With regard to the number of instruments as we advance, very few are used. It is an axiom, that a man does not know a thing if he cannot communicate it to others. One operator says we can learn more by witnessing a single operation than hearing it spoken of for years. He was once taught here that napkins were not necessary, and that *débris* can be blown out of a cavity! He thought a tooth could be better built up by cylinders than any other kind of pellets. In filling a tooth, Dr. Palmer made a slot and put a piece in it, holding it in position until condensed. He then built down, claiming that, in twenty years after, if taken out, it will be pure and clean beneath! Now, if the heat beneath is 95°, what if the patient eats ice? It will reduce it to 35° or 40°, and must contract.

If a cylinder were placed at the side of a cavity and condensed there, the filling may be thus one-half completed, and the cavity is gradually reduced as more and more are added. Cannot the small cavity left be filled as well as a large one? A cylinder filling will remain perfect as long as a keystone in an arch!

The paper of Prof. Knapp reads as if all should be made by cylinders with hand-pressure. If the mallet is used, it would be found to be a labor-saving machine.

He never touches his fingers to the flesh, but always lays a napkin in the mouth. Operators are telling us that by heavy foil they can put in more gold. He would like the experiment tried with cylinders.

With regard to operations in St. Louis, they have a book like a bill book, with two diagrams of the mouth on each page, so that one can be torn off and sent to the patient. Then, by abbreviations by letters, they make the charges quite as well as by complicated, arbitrary signs.

Dr. WALKER has met with success with biborate of soda for washing amalgams. He presented, as an alloy for casting metal plates, in place of vulcanite—

Bismuth, 1 part;
Pure tin, 15 to 20 parts.

To make sharp castings there is nothing that he knows of better.

Prof. ATKINSON. The only way to learn is by close attention and presence at operations. He would prefer to have the filling hollow, if solidly adapted to the walls. With few instruments, under the inspiration of necessity, we can make excellent operations. We should not

talk of contraction of gold from cold, and forget the tooth-substance. There is no appreciable change of the two, or, if any, it is not of importance.

How many are here who never saw their preceptors put a filling in a tooth in the mouth! Do not operate for any one who will not permit a third party to be present. Let the students excavate teeth in the laboratory, and finally go to the office and do *as some of my students have done,—never make a failure.*

It is damnable for a man to wilfully destroy a pulp at any time. If any vitality is left, there is hope of saving the organ. Twenty years ago I came to that conclusion. November 4, 1857, I dedicated myself to save each, all, and every part that it was possible to do.

"*Operative Dentistry.*"

Prof. ATKINSON. How would I bleach teeth? If iron discolors, cut all away but as small a portion as possible for strength; fill full of oxalic acid crystals, put a drop of water in the cavity, and mash the crystals in it. There are other agents,—salts of copper, etc.,—if we sufficiently understand chemistry, that would be available to bleach. We can use chlorine gas through a small glass pipette; must be carefully used, as it might cause œdema of glottis. Here the rubber dam is valuable. Chloride of lime, Labarraque's solution, etc., are all good.

You must not hope too much in bleaching teeth. The great majority will bleach if left to the open air. Fill with wax for a short time, and on taking it out, wash with salt water. Pure oxide of zinc with chloride of zinc is good to put in as a creamy mortar, filling the tooth full, twirling a piece of cotton in it; then cut out all but a small, thin stratum, to see the color. Don't get the teeth too white.

I generate chlorine glass by black oxide of manganese and hydrochloric acid. This works very rapidly.

The agents supposed to color the teeth may be iron from hæmatin, as the mineral, or they may be of vegetable origin; if the latter, these colors are bleached by chlorine.

My process for saving nerves, or portions of them, is to cut away all diseased parts of the tooth possible without giving too great pain, and then to sop with creasote every day—better twice a day. Often a little pus will come away. I have found the bulb come away, and leaving the pulps alive and red in the roots. In one case I have taken out the pulp of all but one buccal root. When recently exposed I treat at once; but, if not, I treat several days, and then I claim that I am no worse off than at first if I should find the pulps dead. Never put arsenic in a human being's mouth. Then put oxychloride of zinc, of cream-like consistency—

introduce on cotton, trimming off and filling with gold; or fill temporarily or preparatively with oxychloride of zinc.

I make this distinction between creasote and carbolic acid. The latter is crystallizable acid from coal; creasote is a combination of two acids—cresylic acid and carbolic acid. Pure Scotch or German creasote from beech wood I prefer, but don't know why; the perception has not got into me yet.

Every diseased action is below the standard of life, none above. I use creasote to make a carbolate and cressalate of albumen, to make a protection like a scab. This I call calciferous matter, or it may be secondary dentine substance. I have seen only a little or crescent-shaped particle form upon one side of the exposed portion of pulp, and sometimes have seen all filled up. I always leave a little creasote in every cavity, and do not wipe it out too dry. I once put in the capping without pain, on the pulp, and there was none for some time after, but the patient returned, suffering, and I opened and found an empty pulp-chamber. This is better than destroying nerves any other way. Creasote cannot destroy beyond a certain point, unless the pulp is unhealthy, for the saturated condition of the pulp will not take up more than to make this pellicle, which protects the balance.

Alveolar abscess will not occur, unless the liver or the pancreas is out of order. Lower the circulation, give an emetic, and follow up with a cathartic. To the point or seat of pain in the gum apply hot or cold water; no lukewarm. Hot is above 112°,—say 150° or 160°. Apply hot or cold, whichever comforts the patient. You may begin with hot flannels (wrung out in hot water), using hotter and hotter, until you come to the extreme heat. White corpuscles are young corpuscles; if they die they become pus corpuscles.

Aconite stops neural circulation; so does heat. They drive back the circulation by contracting the capillaries. If pus corpuscles have formed, cut and let out these devils—*exorcise* them.

If abscess has opened, go through the root and enlarge it until blood comes through. Wash with water and tincture of calendula. Thus I get rid of all foreign substances, go through the alveolus, and amputate the end of the root, if it is necrosed; fill with gold by making a shoulder inside of the pulp canal, and to this point in each root press the gold, filling it completely. Then open the fistula large enough to see the apex of the root, and cut or polish off, as you please. Inject sulphuric acid and water, taking care not to let it run over the mouth; then fill the opening with tannin and glycerine. Chloride of zinc may be used, 480 grs. to the oz. of distilled water. All fibrils found in teeth are post-mortem results. Tomes does not call them nerves.—*Cosmos.*

SELECTED ARTICLES.

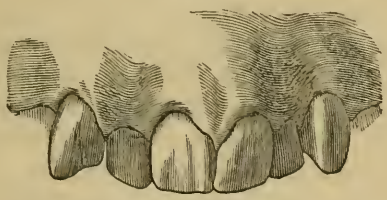
HEREDITARY TRANSMISSION OF DENTAL IRREGULARITIES.

By J. H. McQuillen, M.D., D.D.S., Professor of Physiology in Philadelphia Dental College.

In another family the mother has the superior lateral incisors standing within the dental arch; the right lateral being so far back as to close behind the lower incisors when the jaws are shut. An effort was made to correct this defect, when about seventeen years of age, but owing to incompetence on the part of the operator, or impatience on the part of the patient, the attempt proved unsuccessful.

The eldest daughter of this lady, when fourteen years of age, had the superior lateral incisors occupying the same position in the dental arch as in the mother's mouth, while the canines of each side were so markedly prominent as to resemble tusks, and proved not only unsightly when the mouth was open, but in addition a source of great inconvenience in the movements of the upper lip (Fig. 3). The canines of the

Fig. 3.



mother had been quite prominent at the same age; owing to the efforts of nature rather than the dentist, these now occupy correct positions.

After an expenditure of considerable time, labor, and patience on the part of the operator and patient, due to the dense and at first apparent unyielding character of the alveoli, the young lady's teeth were brought into, and now remain in their proper position, much to the satisfaction, indeed unbounded gratification, of the parents, particularly the mother, who had begun to despair of a successful result. It was one of those cases in which the practitioner, owing to the necessarily prolonged treatment, finds not only the patience of the patient giving way ever and anon, but recognizes in addition the absence of that moral support on the part of the parent which is so important in encouraging a child to persevere in efforts which, if successful, must prove of marked advantage.

The want of this encouragement, no doubt, has been often felt by every practitioner of extended experience, and has frequently led to the abandonment of cases when just on the eve of successful consummation.

In the treatment of this case, the left upper first bicuspid was extracted, and india-rubber rings were then passed around the necks of each lateral incisor, over the labial surface of the canines, and secured by silk ligature to the first molar of each side. These were renewed every other day for some time, and resulted in bringing the canines almost into their proper positions Very little, if any, change, however, was effected in the right lateral incisor. It appeared to be firmly and immovably fixed in the maxilla. In addition to this, every time the jaws were closed, the occlusion of the teeth tended to keep the tooth in its false position. A silver bar, similar to that described in the preceding part of this communication (page 29, January number of the *Dental Cosmos*), was now made, and the india-rubber rings passed over it, and around the right and left lateral incisors. At the same time an inclined plane of hard rubber was constructed to fit upon the lower front teeth and strike inside of the upper laterals when the jaws were closed. With this arrangement, which the patient could readily adjust, the desired result was obtained. It was only gained, however, by carrying the patient through the trying ordeal, in the most determined manner on my part. It may not be amiss to state that, in cases where the alveoli are so firm and apparently unyielding, satisfactory and permanent results can only be secured by slow and gradual efforts, depending to a certain extent on the assistance afforded by nature in the growth and expansion of the jaws. After the teeth have been brought into their proper position, it is necessary that they should be *maintained* there for some time by ligatures, or they will fall back into the old places again.

The next daughter of this lady, nine years of age, had the superior lateral incisors slightly within the arch. This defect was readily corrected with the silver bar, rings and inclined plane referred to.

There are several other cases which have come under my observation and care of a similar character to those cited, but passing over these, I would now invite attention to a most interesting and peculiar series of cases illustrative, in a most marked degree, of the hereditary transmission of dental irregularities.

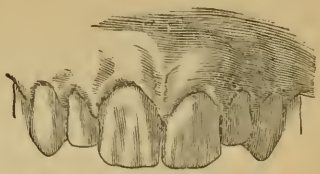
Of these, a gentleman who kindly consented to have an impression taken of his mouth to illustrate this article, as will be seen by the accompanying engraving (Fig 4), has never had any upper lateral incisors. He states that his father was also deficient in these teeth.

In the eldest son of this gentleman, aged nineteen, an attempt has been made on the part of nature to supply the deficiency manifested in the grandfather and father. The effort, however, as will be observed

the engraving (Fig. 5) drawn from a model of his mouth, has only been partially successful, as the lateral incisors are quite diminutive in size.

Fig. 4.

Fig. 5.



An elder brother of this gentleman, who has several children, had dwarfed upper lateral incisors, which were extracted along with the centrals, when a young man. The eldest son of the brother, aged twenty-one, has the natural incisors dwarfed, while in a younger son aged fourteen, the upper laterals are absent, as in the case of the grandfather and uncle: a daughter, aged eleven has dwarfed laterals.

In the preceding portion of this communication evidence has been presented of the most conclusive character of the transmission of hereditary peculiarities in the dental organs, not only from parent to children, but in addition from grandparent to grandchild, reproducing in the third generation that which was, to a certain extent, modified if not passed over in the intermediate one. These cases are in accordance with what has been long recognized by physiologists in the transmission of normal and abnormal peculiarities in other portions of the human organism. This law of hereditary transmission, or what Mr. Darwin denominates atavism, prevails throughout the entire organic world, vegetable and animal, and it is through its operation that each species produces beings similar to itself.

At this time, when the origin of species is an all-absorbing subject of consideration on the part of many, and of investigation with a few, it is possible that the dental organs may perform a not insignificant part in the solution of this important question. When is remembered the prominent part that the teeth have occupied from the time of Cuvier to the present, in the palæontological researches of Owen, Leidy, and others, determining with unquestionable accuracy the character, habits, and peculiarities of extinct animals, in some instances building an entire being accurately conceived from a single tooth, the possibility of what has been suggested above assumes additional plausibility.

On this point, however, the writer does not anticipate being able to do more than merely direct attention to a few additional facts in connection with dental irregularities, leaving it with others to determine whether the teeth may aid in the solution of the origin of the species, and hoping that the suggestion may stimulate some minds to investigate in this direction.

As Sir Charles Lyell has very justly remarked in the "Antiquity of Man:" "In the very outset of the inquiry we are met with the difficulty of defining what we mean by the terms 'species' and 'race;' and the surprise of the unlearned is usually great when they discover how wide is the difference of opinion now prevailing as to the significance of words in such familiar use. But in truth we can come to no agreement as to such definitions unless we have previously made up our minds on some of the most momentous of all the enigmas with which the human intellect ever attempted to grapple." Again: "From the time of Linnæus to the commencement of the present century, it seemed a sufficient definition of the term species, to say that a species consisted of individuals all resembling each other, and reproducing their like by generation."

"Lamarck proposed that the element of time should enter into the definition of a species, and it should run thus: A species consists of individuals all resembling each other and reproducing their like by generation, *so long as the surrounding conditions do not undergo changes sufficient to cause their habits, characters, and forms to vary.*

Without pretending to decide such questions as these, but simply confining ourselves to facts as presented to the actual observations of daily experience, in connection with dental irregularities, not only is the law of hereditary transmission observable, but quite as frequently a tendency to *variation* is offered. Thus, it is not unusual to find irregularity manifested in children whose parents are remarkable for the symmetry and regularity of their teeth.

Again, irregularities of the teeth among aboriginal men have been observed as rare by those who have made the subject one of extended and careful observation. The opportunities, in the Academy of Natural Science of Philadelphia, afforded me of examining Morton's collection of skulls—many of savage nations—are in confirmation of this. The large development of the maxillæ and facial bones generally, which give a preponderance of the animal over the moral and mental, in the face of a barbarian, has very properly been attributed to the tough character of his food, the imperfect manner of its preparation, and the general habits of savage life. The large size of the maxillæ affording ample room for the dental organs, the latter could not be other than symmetrical in their arrangement. The influence of soil, food, and climate in modifying the physical, moral, and mental energies of man, is a truth very generally recognized at the present day; and the influence of food, in modifying the physical structure, is made markedly manifest in the changed condition of the maxillæ, in the diminution in size, attendant upon the

employment of the softened food of civilized life, requiring little effort in mastication, in contradistinction to the coarse diet of the savage. In childhood, when the bones are in a plastic condition, the influence of diet, of a soft or hard nature, of course exerts a marked influence upon the form and size of the maxillæ; and it is a matter of considerable moment, that children should be supplied with food requiring some effort in mastication. The contrast presented in the broad jaws of the English and German is markedly in contrast with the contracted jaws of the American; that the difference in character of food, and the difference in time devoted to its mastication, has much, if not all, to do with this, will be generally admitted. When a diminution in the size, or a change in the form of the maxillæ ensues, from whatever cause, unattended by a decrease in the size of the teeth, irregularity necessarily follows. A prolific cause of this is also found in the interblending of families, or rather of nationalities, particularly in our own country, where the descendants of the English, the Irish, the German, the French, Spanish, etc., are constantly intermarrying; the difference in the size and form of the maxillæ and teeth in these nationalities produce in their offspring irregularities of the most marked character.

When examining a series of jaws of different ages, arranged so as to show deciduous and permanent teeth, it is not a matter of surprise that there should be irregularity in the permanent set; but, when observing their crowded and irregular arrangement in the jaw, prior to erruption, it is rather a matter of astonishment that they should ever assume a regular and symmetrical appearance.

Having noticed the hereditary transmission, and the tendency to variation, on the part of the teeth, it is not an uninteresting question to ascertain what will be the result in those cases of irregularity, transmitted from parent to child, that have been corrected by the efforts of the dental practitioner. Will the irregularity be reproduced in the next generation, or not? This is a matter for future observation, and will demand years for its solution.

HYPODERMIC MEDICATION IN DENTAL PRACTICE.

BY W. F. MORRILL.

The particular branch of therapeutics which I am invited to present you at this meeting, is hypodermic medication. The introduction of this method is comparatively of recent date. M. Behier, a Frenchman, discovered, or originated it, and gave it popularity. Previous to his time, we had, and still have, numbers of methods of endermic medication—acupuncture, vesication, innoculation, are among the varieties em-

ployed—which attain similar results. Where diseases are of local nature, not very persistent, any of these methods possesses excellence and value. But the hypodermic method, on account of the ease and readiness with which it can be employed, renders it decidedly advantageous. The instruments used for this purpose consists of a small syringe, made of glass or rubber, holding about a drachm, graduated, or not with a scale, and furnished with fine pointed, gold plated steel tubes of various sizes, which are thrust through the skin at an angle, while attached to the instrument. The medicines used are previously prepared in accurate solutions, and in administering them care should be observed while injecting the fluid into the tissue that the canula be withdrawn before the syringe is emptied of its entire contents. This precaution is deemed necessary on account of air, which might be forced into the circulation.

Advantages.—The advantages of the introduction of medicines directly into the tissues of the system, instead of through the stomach, are chiefly the rapidity, intensity, and certainty of action which it secures. Moreover, the quantity of medicine employed is much reduced, more uniformity of action, and the time required to affect the system much less. The reasons for these advantages will be most apparent. The condition of the stomach from which absorption is dependant, may possess an irritability along the coatings, such as shall prevent the retaining of food or medicine. In the act of nausea and vomiting, it would be difficult in the extreme, where medicines have been introduced into the stomach and immediately rejected, to know whether any, all, or what quantity remains. Under such circumstances a repetition of doses, unless time be given, would be very hazardous. The quantity of food remaining in the stomach exercises a retarding influence, and sometimes the gastric juices decompose the properties of medicine before absorption takes place.

It is also claimed by those who have much experience in hypodermic methods, that less nausea is likely to occur, less headache, less disturbance along the digestive apparatus; that it is more permanent, more prompt, uncomplicated, and decided; chiefly illustrated in the treatment of local disorders, especially in neuralgia of a particular nerve. It is an opinion generally accepted, that the administration of medicines into the stomach do not become anodynes where anodynes are intended for local pain, without affecting the whole economy. It is therefore recommended, when the object is to relieve local pain, the injection should be made near the seat of disease, due regard being had for the safety of the parts.

It is not my purpose to refer to, or enter into any details with respect to the specific use and action of therapeutic agents, employed hypoder-

micully, with which the medical publications can amply supply you; but rather to submit, briefly, some suggestions pertinent to the introduction of this method in our own practice. There are some forms of disease which come to the notice of the dental practitioner that are proper for him to undertake the treatment of. Among these, seated within the maxillaries and contiguous parts we have dento-neuralgia, irritable pulps, pulpitis, pericementitis, and other disturbing pains, which are within the true province of the dental art to control. Dento-neuralgia, perhaps, presents the most difficult type, and baffles longest our best and well directed efforts before it will succumb. Among the narcotics chiefly used subcutaneously in proper doses, conjointly, and which produces unequivocal effect in the mastery of this disease, are acetate of morphine and atropine. The more recent discovery of the hypnotic virtues of hydrate chloral, which are now being tried hypodermically, with much promise of success. Hydrate of chloral is represented, when admitted into the circulation, as becoming changed into cloroform, and producing very similar characteristic effects to that renowned narcotic. The blood is said to become, thereby, thinned, when chloral is used hypodermically, the temperature lowered, and a sleep of a protracted duration, lasting several hours.

If such are some of the patent virtues which hydrate of chloral possesses, it will certainly have decided advantage over the hitherto great sheet anchor of materia medica, opium. And especially in inflammatory stages just begun, where the act of arrestation of blood corpuscles in the capillaries are impeded, this drug would experience a potent influence in promoting nutritive action by returning them to the circulation. This phenomena, called resolution, is certainly very desirable in diseased action, especially with threatening symptoms of alveolar abscess, unyielding to local treatment, if we can set bounds to it, neutralize the sthenic stage, or appease it, and control the formative action, we have accomplished one of the high missions of a skilled Dentist.—*Register*.

AMONG THE DENTISTS.

The following amusing account of a Reporter's visit to the American Dental Association meeting, held in Nashville, is taken from the *Banner* of that city:—

"A newspaper man is supposed to feel an interest in everything, big babies, big turnips, horse races, base ball clubs, robberies, elections for constable, and all sorts of things which engage the attention and excite the interest of one or many. So we went up to mingle with the tooth pullers. A very intelligent body of men they looked to be. The majority fully up to or above the medium size, and most of them possessing serenely joyful countenances acquired from the constant contemplation

of excruciating human suffering. There were a few, however, fragile and effeminate looking delegates, who, from appearances, would not be able to hold a two-pound weight at arm's length. It won't do, however, to calculate on a dentist's strength from his appearance. We once knew a girlish-looking member of the profession whose complexion vied with the best pearl enamel or lily white, whose eyes were as blue as the sky and who had nothing manly in his appearance, save his moustache. This sign of virility was coal black, and would have done honor to any man six foot by three. It was not unlike two gigantic caterpillars bristling for combat under his nose. The person who counted on his being weak labored under a painful delusion. Weak, did I say? Why, the fellow actually practiced with a pair of fifty-pound dumb-bells, and rung the changes in them with an ease and grace which would have done honor to a circus athlete. His muscles were like bands of steel. We have seen that effeminate-looking man throttle a giant six feet four and broad in proportion, who was perfectly wild with the torture of the instrument and was struggling like a lion in the operating chair, wrench open his jaw and draw out the offending tooth as though he were handling an unruly child.

In one of the ante-rooms of the hall of meeting, there were a couple of those improved racks for torture called dentists' chairs. Ah, how softly padded were those deceitful machines, and how bright the velvet with which they were covered. A red-haired sanguine looking man was illustrating with the help of an assistant, the vast advantages which they presented as compared with the old fashioned chair. That was a wonderful seat which the chief executioner was illustrating and expatiating upon with great volubility. It bristled with polished cranks and screws and slides that made our blood run cold as we saw them swiftly manipulated. A single turn of the crank would throw the unfortunate patient into a horizontal position and enable the operator to throttle him while thus helpless; another thrust and the chair swung to one side and the victim's head could be pinned under the operator's arm as in a vice; touching a lever and turning a crank shot the occupant several feet in the air, where he could be firmly held and his upper jaw devastated while he was helpless; touching the lever again and turning the crank lowered the sufferer to the floor in such a position that he could be secured motionless by the operator's knee. The eyes of those around us gleamed with strange satisfaction, and their countenances were lighted up with exultation as they watched these rapid movements. We alone stood spell-bound with horror. What if those savage men, longing for a victim, should seize upon us and pin us to that horrible rack? We fled from the spot.

As we passed up the room we saw another door ajar. There was no one

within, but upon a long table were displayed all those keen and glittering instruments of torture found no where except in a dentist's operating room. A horrid fascination caused us to enter. Did you ever shudder at the dreadful display of tools known to no profession but that of the man who cures the tooth ache. We have, and those dreadful forms will live in memory while life shall last. Well, imagine all the blood-chilling instruments of a score of dental establishments collected together and spread out in one awful array. There were big forceps and little forceps, cork screws and chisels, and big cant hooks, which looked as though they were made to lift the teeth of a mastodon. There were drills and punches, and bodkins, and files, and saws, and lancets, and screws, and sharp tubes, and dreadful looking machines for applying laughing gas, or ether. To one side stood a bushel basket full of teeth, old roots, pieces of jaws on jaw, broken and forked fangs, decayed in all sorts of ways. They were grim trophies, and we retreated from this place even more speedily than from the first. If we don't have the night-mare for a six months we shall consider ourselves lucky.

But now the hour of meeting had arrived, and the President of the Association, a veteran operator, with a countenance hard and stern, called to order.

The particular subject up for that day was operative dentistry. And presently there arose a sallow, feeble looking man, whose voice was also feeble and obstructed, to lecture. He first showed how the dentist could keep his accounts without having recourse to a book, and in a sort of dental short hand. Diagrams were used in the illustration and explanation, and we remember that the first was a female head, after some classical model perhaps, with the face cut up into four sections by lines passing, the one perpendicularly through the nose, and the other horizontally through the mouth. The next diagram showed the teeth as they would be divided by these lines, and we learned that we had thirty-two teeth, or at least should have that number, had not five or six of them retired from business. The four sections were named right superior, left superior, left inferior, and right inferior. The next cut showed four sets of figures, from one to eight, standing off like classes in a district school. These figures represented the teeth, and by an ingenious arrangement of hieroglyphics, the lecturer proposed to note at once what had been done to any particular tooth in the human head.

Now, said he, I regulate the amount of my charges just according to the amount of force, vitality or nervous energy expended in an operation. I will not work in any other way, and my patients all understand it. I make my charges on the spot when I can calculate just how much vitality

I have consumed in the work. The lecturer looked as though, on this scale, the filling of a tooth would cost about $75 or $100.

The speaker now described the process of filling a tooth. It was very interesting. "Take," said he, "for instance, the second molar anterior, right proximo, cavity inclining towards the labial wall. First, cut away the face, smooth down, saw out and leave strong angles. Now commence with No. 0, put down the point firmly and strike with the lead mallet; build up all around, carefully filling the lower and upper inferior and superior arches and the right anterior cavity, using tools Nos. 1 and 2. Lay on the gold with the scratims and advance to the proper angles and finish off carefully the ridges and valleys, promonteries and capes of the original."

This was clear and lucid; we began to feel like a dentist. The man is a wonderful one, thought we. At the end of the lecture we found ourselves standing beside a tremendous six footer from St. Louis. "Doctor," said we, "who is this doctor P— ?" (the lecturer.)

"He is," replied my gigantic friend, "a gentleman from Ohio; one of those erratic geniuses who are so difficult to follow. Now, with the exception of a few minor points, perhaps, in what does his mode of operation differ from yours?"

This was a stunner. Yes, to be sure—what was the difference. We were plunged into a profound reflection. We revolved the whole subject from beginning to end. We have thought of it constantly ever since, and we pledge you our word, reader, we cannot up to this moment decide in what his mode of operation differs from ours. This is the penalty of being mistaken for a dentist. "In what ——," why it may take years to solve that question."

EDITORIAL.

SUBSCRIPTIONS FOR THIS VOLUME.

Those of our subscribers who have sent us their $2, will accept our thanks. Those who have forgotten to do so, and some of our best supporters have procrastinated, will be kept "ever green in our memory" if they comply before the New Year.

We intend to take "a flying trip" among our *confreres* in Canada, during the year, and would like to meet them all as subscribers. The Journal is devoted to the interests of the Dentists of the whole Dominion. Gentlemen! do not hold back from freely giving us your support. You will find it will well pay you.

We send this number to all whom we *feel sure* intend becoming subscribers. Any who object to paying in advance, will please write us, stating their reasons. We are always open to suggestions for improvement, &c. B.

The next number will contain several valuable original articles; a draft of a Dominion Fee Bill, &c., and will be illustrated.

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ORIGINAL COMMUNICATIONS.

PRACTICAL HINTS ON MECHANICAL DENTISTRY.

BY R. G. SNOW, D.D.S., BUFFALO.

Read before the 7th and 8th Districts Society of the State of New York.

MR. PRESIDENT AND GENTLEMEN.—The subject you have assigned me for a few practical hints, is so old, and has been so thoroughly discussed, and your various methods of manipulation are so well established that it hardly seems possible to advance anything new, or that will in any way change or improve your practice. The substitution of artificial teeth, however, when the natural organs are lost, and, to do this in such a manner as to preserve the natural expression of the face, and afford the greatest usefulness and comfort to the wearer, is second in importance only to the preservation of the natural organs.

It will therefore bear a good deal of talking about and discussing:—

And, first, let me say, as I have said before, there is far too much mechanical dentistry done; we are too ready and willing to extract teeth. Indeed, there are many who claim to be in the profession who do little else than extract teeth and insert artificial ones.

The true surgeon always uses every possible means of saving a limb before resorting to amputation. The oculist exhausts his skill in trying to save and make useful the natural organ before resorting to an artificial one; and does not the same rule hold good in our profession? Is not he the true dentist who endeavours, by every possible means, to save the natural organs before resorting to extraction?

At the meeting of the American Dental Association, held in Nashville in August last, Dr. Walker said, during their discussion on mechanical dentistry, that he thought "the time would come when extracting teeth would be a crime." I leave it to you, gentlemen, to say whether that time

has not already arrived, whether it is not criminal to extract teeth in the wholesale way that many do.

People ought to know better than to submit to such treatment, but they get their ideas of dentistry from the dentist whom they employ, and many are taught to believe, and do believe, that the great desideratum is to get rid of their natural teeth and have them replaced by artificial ones, and that then their troubles are at an end, that a well made whole set will last them their life time. Now people ought to know better; and dentists who have the good of their patients at heart, ought to teach them on every occasion, the value of their natural teeth, and the necessity of preserving them. And here certainly is a chance for missionary work, and, if some means could be adopted to instruct people on this point, great good would result from it.

Nothing is permanent or stationary in this world. If we take a physiological view of this subject we shall see that every organized living being is always and at all times undergoing certain changes, and those changes in early life all tend to growth, development and perfection, and when full development is attained the tendency is to decay, destruction and death. The form and general contour of the face, as is apparent to you all, is greatly changed from infancy to adult age; and the change is equally apparent from middle life to extreme old age.

Now what are these changes? I shall mention a few of them only. The maxillary bones undergo manifest changes in their form from infancy to old age, and it is a curious fact that the form of these bones in old age, is, in many respects, similar to what they were in infancy. And first I will mention the alveolar processes. In the fœtal state, instead of a process or projection, you find a groove inclosing the germs of the teeth, and the processes are developed as the teeth are developed. When the deciduous teeth have protruded through the gums, they seem to occupy the whole of the alveoli; but about the sixth year the jaw has grown, and the process is sufficiently developed to admit the first, or six years molar, and at the twelfth or thirteenth to admit the second molars, and at the twentieth or twenty-first, to admit the third molars, or dens sapientiæ, when the maxillary bones and the alveolar processes may be said to be fully developed.

The alveolar process would thus seem to be formed to sustain and support the teeth, and it is evident enough that they are so, for the moment the teeth are lost, either by disease or by dentist, nature sets the absorbents to work to carry it away and reduce the jaw to the same form it had in infancy; and, I presume, many of you have seen cases in extreme old age when there was not only no alveolar ridge, but a depression, a groove similar to what there was in the fœtal state; and this particularly if the

patient had worn a bad fitting plate for fifty or sixty years more or less. And right here let me offer you a "hint." A plate, and particularly a bad fitting plate, by its pressure greatly hurries this absorbtion. Now let me ask you if it is not your duty to impress it upon your patients, that they must not wear a plate any longer than it continues to fit well. They may heed your advice or they may not; at any rate do your duty and let them do what they will and take the consequences. But, by no means ever say to a patient that a well fitted set of teeth will last them their life time. I aver that any dentist who advances that idea to his patients is lacking either in honesty or a proper knowledge of the principles of his profession.

Again, in the infantile state the angle of the lower jaw is very obtuse; in the fœtus it is nearly straight, but as age advances it becomes less and less obtuse, and at mature age it has contracted nearly, and some authors say quite, to a right angle. The condyloid and coronoid processes in consequence of the obtuse angle of the jaw in childhood, look obliquely backward and upward, the coronoid process being considerably the highest when the jaw is placed in a horizontal position; but, at mature age, by the gradual lessening of the angle of the jaw, they are brought to be nearly on the same level. In old age, however, the angle of the jaw has again become obtuse, and the condyloid and coronoid processes have assumed their original infantile state.

Once more :—The pterygoid process of the sphenoid bone are also affected, and undergoes changes during the development of the teeth. These processes give origin to the pterygoid muscles which are inserted into the lower jaw and assist in mastication. They, the processes, are, says Blandin, to the superior dental arch, what the posterior border and angle are to the inferior. Both are alike points of support to the alveolar arches, and both undergo similar changes during the development of the teeth. At birth they look very obliquely forward and downwards. In adult age they have taken the vertical position, and in old age they have again returned to their primitive oblique position.

Now it must be admitted that these, and other changes of like character which might be mentioned, exert a great and controling influence on the configuration and expression of the face. It would seem that, at each period of life, the face has its appropriate form and expression, and I submit it to you, gentlemen, whether the early extraction of the teeth does not tend to hasten these changes, and bring on prematurely the expression of old age? I know very well that you propose to restore the natural expression by means of an artificial set of teeth; but this is by no means always done. I think I am safe in saying that it is very seldom done; mere mechanical skill can never do it. The skill of the artist

only can accomplish it; and how many of those who are engaged in mechanical dentistry possess the requisite artistic skill to restore and preserve the natural expression I leave you to decide. I fear there are many whose thoughts penetrate no deeper into the subject than to the dollars and cents.

Much was said, also, at the last meeting of the American Dental Association, in regard to the effect of dental plates on the soft parts of the mouth. Many attribute the soft spongy state of the gums which we sometimes see to the effect of rubber, or rather the mercury in the rubber. Others had seen spongy gums apparently produced by wearing gold plates. Each had his opinion at the commencement of the discussion, and each had also at the conclusion. Now I apprehend that there are two causes, neither of which were alluded to in the discussion at Nashville, which tends to produce a spongy, diseased state of the gums in the mouths of those who wear dental plates, and neither of them having any reference to the material of which the plate is made.

First: The continual wearing of the plates, night and day. Now it must be apparent, on physiological principles, that this constant pressure of the plate prevents the normal circulation of the blood in the parts pressed upon, thus tending to produce this red, inflamed, spongy state of the gums.

Second: The wearing of badly fitting plates. Some of the worst cases I have ever seen were produced, so far as I could judge, by perseverance in wearing badly fitting plates. They, of course, keep up a constant irritation, and tend to inflammation and a spongy state of the parts.

This leads me to say once more that patients ought never to be allowed to wear a plate after the parts have changed by absorbtion so as to destroy its accurate fit; no plate ought to be worn unless the fit is good.

Patients ought also to be instructed to leave their plates out when they retire for the night, and allow the gums to recuperate and as far as possible establish a healthy circulation.

I might mention a third cause, and that is a constitutional predisposition from a syphilitic taint, or some other similar cause. This of course would require constitutional treatment, and is not in my province at present.

Now, gentlemen, in view of what has been said, is it not apparent that our profession is tending too much to mechanical dentistry? Is it not our duty to use greater efforts, and exercise greater skill in saving the natural teeth, rather than to fall back at once upon artificial ones? The introduction of rubber as a base for dental plates has certainly worked a great revolution in mechanical dentistry, and by its cheapness has placed artificial teeth within the reach of every body. I think its worst effect

is, that it has led people to undervalue their natural teeth. Do you ask me what remedy I would propose? I answer, I'll preach to my patients, and I hope you will to yours, and, in course of time, the little leaven may leaven the whole lump.

BORAX.

By W. E. Hughes, L.D.S., Aylmer.

Thinking that the experiment I have made with this substance may be of use to the profession in general, I proceed to give the following new use to which it may be put, and, I think, with advantage. It is well worth a trial, and will not cost much to try, and the way I accidently stumbled on it was this. I had read that borax applied to plaster made it very hard, and one day I was using a boiling hot solution, about half an ounce to a pint of water, when I immersed the model therein and immediately withdrew, and proceeded as usual to put on the teeth. After vulcanizing the plate in the usual manner, and when the flask was cold, I pried it apart and was agreeably surprised at the result. Scarcely a particle of the plaster adhered to the plate; that is, on the upper surface. I therefore have arrived at the conclusion that this simple process will answer instead of liquid silex, collodion, tin foil, or any of the ætherel solutions sold for the purpose of covering the model. The solution should be used boiling hot, allowing the model to remain in only two or three seconds. The same solution may be used a number of times. It is well worth a trial, and, if found as useful as my experiments have proved it to my satisfaction, I shall feel glad in knowing that some good may arise from the accidentally finding out this simple process. Whether or not any particular chemical action takes place I am not prepared to say, or even to give any reason why, for the above cause. I leave this to any person to study out who wishes. I merely give the facts of the case as I find it.

OXY-CHLORIDE OF ZINC.

By X. Y. Z.

I think a great deal of oxy-chloride of zinc for capping exposed pulps, because I have proved to my own satisfaction that I can save hundreds which ten years ago I would have destroyed. That I consider to be a desideratum, and if I do find my hopes sometimes blighted by death and failure, the fact that we can save a bare pulp with certainty in many cases is a fact of great value to our profession .Manyf ailures result, no doubt, from ignorance, haste to finish, and improper application. It is so with everything we possess for the preservation of the teeth.

One little point in using oxy-chloride of zinc I have found of great use. I find that any painful effect of the acid is lessened by heating it a little on a slide of glass just before mixing the paste. The pulp bears it with more impunity by reducing it to its temperature. The same may be said with amalgams; I warm the first pieces. However, care must be taken not to over-heat the oxy-chloride of zinc, as that will make it crumble like chalk. I have a microscopic slide warming on the tray of my annealing lamp; I drop sufficient of the fluid on this, and, having the cavity of the tooth ready dried, I mix the paste and instantly insert it, drawing a dry napkin across its face, and putting a drop of collodion on its surface to protect it from the saliva until hardened. With intelligent care I think oxy-chloride of zinc may be found to be a more effective and perhaps permanent filling, than we believe.

QUICK METHOD OF MAKING DIES.

BY J. A. TROUTMAN, TORONTO.

I first take an impression of the mouth and make a model the same as for vulcanite, then take a flask (the same as is used for vulcanite) and drill three or four holes through the bottom; fill the lower part of the flask partially with sand, a little damp; put some sand on the inside of the model, and press or drive the model firmly into the flask, then press the sand around the outside of the model, not allowing it to come up any further than the impression did; brush around the model, and then insert a sharp instrument through the holes in the bottom of the flask to allow the steam to pass out, then lift out the model and replace any sand that might be removed by the drawing of the model, then set the upper part or ring of the model firmly to its place and pour in the metal and allow it to cool. Then remove the ring, take out the model, attend to any defects that may arise from pouring the metal, set the cast on a bench, model upward, pin a slip of thick brown paper around the cast, pour the lead inside of the paper (the paper is strong enough to hold the lead without the support of sand) remove the paper and the cast and die are complete.

By this method the most difficult casts can be made with the use of about a handful of sand, and with much less labor than by the ordinary method.

THE "PYROXYLINE" BASE FOR ARTIFICIAL DENTURES

The material is cotton fibre, decomposed with ether. It is not explosive, but combustible at about three hundred degrees Fahrenheit. Hence its name, Pyroxyline. It has the strength, texture, and appearance of

translucent horn; but is more compressible. It is not at all affected by the secretions of the mouth. Raised or pressed between dies at a sissing heat, under a severe pressure, it readily takes and retains the form of the dies. Parts or pieces are readily united by applying to surfaces in contact, ether of the proper strength. If the ether be pure (as is Squibs'), one-third alcohol must be used. All other is uncertain, and is to be tested before trusted. To unite the teeth, filings from the plate, or other like material, are used as a solder; and in all cases the eye must witness an actual solution; the grains or filings must be lost, and a homogeneous lustrous appearance taken on.

But this material, being wholly or partially dissolved, shrinks more than an hundred per cent. in drying. Hence its manipulation throughout, must be treated with reference to this fact. Properly manipulated, its shrinkage is made useful instead of hurtful. The plate never tarnishes, nor will the filings, if the following rules be well observed:

First. The filings must be clean, fine, and free from all admixture, except a very little vermillion.

Second. They must be thoroughly dissolved, so as to assume a clear, translucent and waxy appearance.

Third. They must be very thoroughly packed or pressed together, while setting or hardening, to prevent porosity.

Fourth. The piece must never be put in the mouth, or in water, until the ether is entirely dried out, by a heat equal to boiling water, continued for at least half an hour, after the case is otherwise ready for the mouth. With these precautions, the secretions of the mouth produce no change, except a very slight but agreeable change in the color, leaving a beautiful golden hue, and a clear and high polish. The Pyroxyline acquires additional solidity and strength for six months.

The plates being supplied, well seasoned, they have only to be raised with dies, as are metallic plates, but always with a screw power, never by blows. The male die should be zinc, its counterpart lead.

The impression being taken and the teeth selected, the first thing is to back them up, by putting a quantity of filings on and about the pins; then dissolve them thoroughly with ether; let them dry for a half hour or more; see that the heads of the pins are uncovered, that the material may shrink around the necks of the pins. Use only teeth with good necks and heads.

Second. The teeth being thus backed up, may be ground and articulated. When articulated and set to wax, as upon metallic plates, then remove all wax from the outside, wash the plate with alcohol; scratch serrate, or furrow the surface wherever the filings are to attach. Then put a thin coat of filings *outside* the teeth; dissolve them well with ether.

After a few minutes add more filings, and dissolve them. After filling up to your satisfaction upon the outside of the teeth, put up the case in plaster just as for soldering, only be more careful to carry the plaster over the cutting surfaces of the teeth, to hold them very fast in all directions; and let the plaster cover the inside of the plate quite up to where your filings are to cover it, to prevent the springing of the plate. Always put up your teeth on a true cast of the mouth, and keep them cramped or well fastened to it till the case is put in the mouth.

Third. You will now remove the wax, clean and serrate, or furrow the plate; then put a thin coat of filings under the teeth and over the plate as far as you wish them to extend when finished. Wet plentifully and constantly with ether until they are thoroughly dissolved and well united to the plate. Be careful in putting on the first filings, to press them before wetting, and also after partially drying, very thoroughly down to and under the blocks or teeth, and in each succeeding application, repeat with force this pressure. Be sure to make all solid under and around the teeth. The first coat being dry, add another, and yet another, until you have filled up to your pleasure, allowing each coat to dry by itself, and subjecting each to hard pressure. Be careful to keep a space between the plate and teeth open until the finishing coat, and also, do not unite the blocks or teeth, till the finishing coat is put on; so that the material may shrink toward the centre and around the pins of each block, and also shrink to the plate without drawing in the teeth. Continue hard pressure as long as you can produce any effect; be sure and make all solid.

All done as above, remove the plaster. This may be done by cutting down to the teeth in the centre of the arch. Each side will thus pry off, leaving the teeth on the original cast. Now fill up the outside, and add another coat of clean, fine, properly colored filings; attend to all imperfections; burnish with a heavy hand all the filings; brush and finish up with the pumice and whitening. Then cramp or screw your case fast to the original cast, to remain until called for. The plate can be fitted to the mouth with pliars just as a metallic plate. It will be seen that in every step of the process of manipulations, reference is had to the shrinking tendencies of the material:

First. Hence, the plates are got up and submitted to a ten tons pressure, and left to season for weeks before they are put into the market.

Second. When raised or put up by the Dentist, they should be pressed, and for a time remain under the pressure of heated dies.

Third. When finished and ready for the mouth, they should be submitted to a heat, equal to boiling water, for at least a half hour, to dissipate all remains of ether and shrinkage.

Fourth. The filings are first put upon the teeth and pins, in order to dry and shrink to the pins and not from them.

Fifth. The filings we first put upon the *outside*, that they may shrink up to and around the teeth, and that the inside may reach to and shrink together.

Sixth. The filings are to be hard pushed and parted inside, so as to unite them with the outside, and make all solid.

Seventh. The filings are to be kept cut off from the base inside, and also the blocks kept separate, until well dried, so as to prevent drawing the teeth out of place.

Eighth. A piece should never be put in the mouth, until after being thoroughly dried and free of all taste and smell of ether. Thus there will be no change in the mouth.

For under sets, it is necessary to have the plate in a large sheet, to be cut to the case. And to prevent the danger of springing or drawing together, a very narrow plate of silver should be raised and put over the Pyroxyline plate, under the teeth, not so wide but the filings will entirely cover it and hold it fast. This gives the most perfect under set ever made, all our previous views of weight notwithstanding.

A strict adherance to the above instructions, will prevent all difficulties of manipulation.

PROCEEDINGS OF DENTAL SOCIETIES.

ANNUAL MEETING OF THE 7TH AND 8TH DISTRICTS SOCIETY OF THE STATE OF NEW YORK.

REPORTED BY C. S. CHITTENDEN, L.D S.

The Second Annual Meeting of these combined Societies was convened in the Council Chamber of the City of Rochester, on Tuesday, the 25th of October; the President, Dr L. D. Walter, in the chair.

The first of the special topics for discussion was then taken up, viz:— "Secondary Syphilis and its effect upon the osseous system." Dr. L. F. Harvey, essayist. In his absence, his essay was read by the Secretary.

Dr. Bennett said that the form of syphilis which was of most importance to be understood by the dentist, was the tertiary, which attacks the osseous system. Primary syphilis is chancre, secondary syphilis is the ulceration, and tertiary syphilis is the destructive stage of the disease.

He had seen a skull affected by the tertiary form of this disease which was like a honey comb. As dentists, we are not called on to cure this disease, but to repair and sustain those parts which have been destroyed

by it. Dr. Whitney said that the subject is of more importance to the dentist than Dr. Bennett would have us believe. He thought it was the duty of every dentist to be prepared to treat the disease when he meets it and thus prevent the necessity for the replacement of lost parts.

The hour for adjourning having arrived, the discussion was closed.

Afternoon. Dr. French's essay on the "Filling of Fangs; and Alveolar Abscess," being the next subject on the programme, it was called up, when he read a very interesting paper on the subject.

Dr. Bennett, omitting the first part of the subject, said as follows, viz: In order to the proper understanding of the mode of treatment of this disease we must first know what it is. Alveolar abscess is inflammation which has passed the adhesive stage. It is a breaking down, a disintegration of tissue. Plasma is thrown out, but from a low diathesis, or a lack of vitality, or a continued irritating cause, the tissue cells are not vivified. It commonly differs from ulcerous abscesses in that the disintegration does not spread to a discharging healthy tissue. If it reaches the gangrenous stage it is commonly called by a different name. It is by means of inflammation that nature carries on the reparative process, but it must not pass beyond the adhesive stage. Then plasma is deposited, and, if the circumstances be favourable, it is built up into tissue cells. What we wish to do in alveolar abscess is to establish a clear line of demarcation between healthy and unhealthy tissue.

To destroy and obliterate the half broken down cells, and leave a healthy surface to work upon. First, then, cleanse completely from pus, that you may get at the diseased surface. This may be done by thoroughly syringing with tepid water. Next cauterise every part of the diseased spot. This may be done with any escharotic. If the abscess points through the gums I commonly use pure creosote, forcing it through the tooth and out through the fistulous opening; sometimes I use a solution of nitrate of silver. When there is no fistulous opening, the final cure may demand more time.

Force the cauterant as far up as possible, and leave a loose pledget of cotton in the tooth cavity to retain it, depending upon absorption and capillary attraction to carry the remedy where it is needed. When the surface is thoroughly cauterised, little more will, in ordinary cases, be needed. Inflammation will again commence the reparative process. If the irritating cause be removed it will not probably again pass the adhesive stage, and a cure will quickly be effected. Some demulcent preparation may be needed, and the quicker the root of the tooth is filled the better; but foreign substances do not intrude to excite new complications. When the practitioner once thoroughly understands inflammation, the treatment of what is called alveolar abscess is a very simple

matter, unless it be in some exceptional cases of impaired vitality. But if nature has not sufficient force at hand to build up waste places she must be reinforced by constitutional treatment. Sometimes the foramen of the tooth will be found to be sealed up, when prompt measures must be taken to open it that the seat of disease may be reached.

Alveolar abscess presupposes the death of the pulp and nerve. Such a violent inflammation of the investing membrane as precedes this disease, it seems to me, would be amply sufficient to produce the death of the pulp, if it be not already lifeless. But its, at least, most common cause is the irritation of what becomes a foreign substance, namely, a dead pulp.

If a sliver be thrust into living muscular tissue, mother nature commences the process of its removal by causing violent inflammation, which rapidly reaches the suppurative stage. The tissue cells immediately contiguous to the foreign substance are broken down and changed into pus, and with this sloughing off the sliver is removed. Completely analogous to this is alveolar abscess.

Sloughing commences, that with the dead tissue thrown off the irritating substance may be eliminated. The dead pulp and nerve in the one case answers to the sliver in the other. In both is the treatment the same, only that it is complicated in the one case by the confined position of the irritant. Remove the irritating cause, and in each nature will commonly effect its own cure.

Dr. Gifford said, Dr. French has told us that we never find an abscess on a tooth unless the nerve is dead, but he had met more than one case of abscess over teeth in which he had found the nerve alive, the teeth being quite sore to the touch, and considerably elongated.

In reply to a question he said he had not been able to find any connection between these living nerves and the fistulous openings.

Dr. Southwith gave a very interresting description of his method of treating abscess and filling roots, by means of diagrams on the black board.

Dr. Daboll spoke of a tooth over which an abscess had formed, after it had been filled for years. As the tooth had become painful he removed the filling and proceeded to treat it in the usual way, but found that after each dressing more violent pain ensued, and he only succeeded after drilling through the root and enlarging the foramen. He did not think there are many cases of abscess which cannot be cured if they can be got at.

Dr. Holmes had seen many instances of necrosis of the ends of the roots, or of the alveolus at that point. He treats ordinary abscess as has been described by others. In filling roots he dips a piece of gold into osteo plastic before inserting it; thinks the oxy-chlo. assists the gold in closing the foramen; has never been successful with gold alone. He prepares the gold in the same manner as if it were to be used alone, then

mixes the oxy-chlor. quite soft, and dips each piece of gold into it before insertion.

The next subject was "The treatment and filling of the deciduous teeth and the first permanent molars."—Dr. Southwick, the essayist, said he was not prepared with an essay, but would be happy to offer a few remarks on the subject. In the first place, then, he would never extract these teeth unless there was danger of necrosis. They were placed in the jaws of children for a purpose, and he was unwilling to remove them until they had performed the duty for which they were intended. He had recently seen a child whose cuspids had been removed at an early age, and when the bicuspids came in they stood next to the lateral incisors, leaving no room at all for the cuspids.

Dr. Daboll thought the maintaining of the deciduous teeth in the jaw until the permanent ones were ready to take their places, was of the greatest importance. If removed sooner the jaw would contract so much that there would not be room enough for the permanent set.

He tells parents that they should nurse aching teeth carefully instead of having them extracted. Always fills them if possible and uses for this purpose gutta percha, and seldom has any trouble.

Dr. Barrett said there were no two opinions in regard to the necessity and desirability of preserving the deciduous teeth, but some children have such excitable, nervous temperaments that they cannot bear the pain of tooth ache, and when he meets with such cases he extracts. Again, he has met children with the deciduous teeth, and the gums about them, so much diseased that there was danger of mischief being done to the permanent organs: in such cases he would extract.

Dr. McCall fills the deciduous teeth with some plastic filling, and saves them till the new ones come.

Dr. Southwick treats them by any ordinary means to allay the pain of aching teeth, but always leaves the tooth substance in the jaw. He would, in some cases, fill the sixth year molars, but often extracts them, but not till the child is past its tenth year, and not before the second molar is emptied. But few mouths are large enough to contain the three molars, and so he would prefer to sacrifice the first, and thus leave room for the wisdom tooth, which, in most cases would be as useful as any other.

Dr. McCall said we were not careful enough about teaching parents in regard to these sixth year molars. If we were we should save children from a vast amount of suffering.

Dr. Southwick had endeavoured to do his duty in this matter, but so far he found that parents had entirely disregarded his teaching, and he was getting tired of wasting his breath.

Dr. Whitney has always been in the habit of saving the deciduous teeth as long as possible. When children are brought with a throbbing pain of the nerve, he punctures it and lets out a drop of blood and then treats as in ordinary cases.

The next subject, "The Gums, their Diseases and Treatment," was passed over as the essayist, Dr. Fowler, was not prepared to read one.

SECOND DAY.

Clinics were held by Dr. Walter and M. E. Smith, from 8 to 11 A. M. Dr. Walter described his method of filling with cylinders. At 12 the meeting was called to order to listen to an essay on "Practical Hints on Mechanical Dentistry," by Dr. R. G. Snow.

Dr. Whitney advocated the putting in of pivot teeth and preserving the natural roots as long as possible. He thought that the face rarely retained its natural expression after the extraction of the roots.

Dr. Walter objected to the leaving of the roots in the mouth, as it is so very difficult to make artificial teeth over them, that will answer a good purpose. Adjourned.

2 P. M. Dr Miller read a valuable paper on "Miscellaneous subjects," which was well received, after which several members of the society spoke of the use of mercurius vivus in incipient periostitis, occupying the time till 4 o'clock, the hour fixed for adjourning. During the meeting opportunities were given to quite a number of gentlemen to exhibit new inventions and appliances connected with dentistry. This was a pleasing and profitable feature of the proceedings.

An hour was given to Dr. Brockway of Albany to explain his method of inserting teeth on the Pyroxline base. He stated that he had obtained a patent for it, both in the States and Canada, and that he was then ready to dispose of office rights to use the material at $10, the same as he had done to others. He also stated that he had made very great improvements, both in the material and manner of working it. Dr. Bristol asked whether those who had already paid the $10 would be allowed to use the improvements without paying anything more, and whether each Licentiate would not be liable, under some peculiar circumstances of the Patent Laws, to have his books overhauled from time to time to see how many sets of teeth he had made, in order to compel each to pay a Royalty. Dr. Bristol stated further that he was one of the first to take hold of rubber and introduce it, and had been put to a great deal of trouble, annoyance and expense by those holding the different rubber patents, and he was unwilling to assist in introducing a new *patent* material unless some positive guarantee could be given that the Pyroxyline Co. would not serve their Licentiates as shabbily as the Rubber Co. had done. Dr.

Brockway would not say anything positive in the matter. [It is greatly to be hoped that we, in Canada, are not to be put to such exceedingly great annoyance in the use of that base as our brethren in the States have been in using rubber.]

Dr. Moffatt, of Harrisburgh, exhibited his adamantine base; Dr. Kelsey his new vulcanizer, (*see advertisement*); Dr. Brown, of Buffalo, a porcelaine lined retort for making nitrous oxide gas; Dr. Carpenter exhibited and explained Greens Pneumatic Burring Engine and Automatic Plugger; and Dr. Hopkins a Gas Regulator, by which an even temperature can be maintained for hours without any attention. Dr. Loomis sent some account of his manner of casting aluminous plates, which was read by the Secretary. Altogether, it was one of the best if not *the* best meeting of the profession ever held in that section of the country.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

Odontographic Society of Pennsylvania.—Sep. 8th. Dr. Trueman.—We have all noticed the liability of approximal surfaces to decay, especially of the bicuspids, and generally agree that this is due to their peculiar shape,—the crowns being so much larger than the necks, leaving a triangular space or pocket between them, in which the food lodges, and decomposing generates destructive agents. Prof. Arthur proposes to remedy this by changing the natural (as usual) shape of the teeth, removing the overhanging portion of the crown,—leaving a slight and, easily cleaned space between them; and is so confident of success as to recommend this operation in teeth unaffected by caries, if the condition of the other teeth leads us to to fear any special liability to trouble at this point.

On the other hand, Dr. Perry contends that we should endeavor to *maintain* the natural shape of the tooth, and restore with contour fillings any portion lost by decay,—even *exaggerating* their peculiar shape by building out the crowns so that they may touch at one point, and thus keep them separate at the necks; and make this pocket as large as possible, trusting to the filling extending below the point of danger,—replacing the easily-injured tooth by a more resistent material. I cannot but think, while the idea may be plausible in theory; that it will not prove reliable in practice; yet it is well worthy of consideration. We are commanded to prove all things. In matters of this kind we must be guided by our own experience,—we do not all work or see alike, nor is it to be expected beings so entirely different, so richly endowed with reasoning powers, should do so. We aim to preserve the teeth, and make them, as useful and *beautiful* as possible, and it is our duty to make use of those

means which *we*, individually, in the exercise of our own judgments think best.

From experience, I have been led to regard contour fillings as weak and unreliable. That it is possible to make the gold solid enough to hold its own there is no doubt; but exposed as they are, presenting more or less leverage to the force used in mastication, it is extremely difficult to anchor them with sufficient firmness to effectually and completely resist it. They are very often found, even after a short time, slightly dislodged, with a little space between the tooth and the filling, and may remain so a long time: their condition not being suspected until decay has made extensive progress; or, especially in bicuspids, where the filling extended to the gum, decay will set in below it, the overhanging portion concealing it until irreparable injury has been done.

When decay has set in, caused by the difficulty of keeping the teeth clean and free from accumulations of food, owing to the peculiar shape, it seems much more reasonable to remove, as far as possible, the first cause of the mischief while repairing the injury.

The food, packing between the teeth thus separated, is very often an annoyance, but if it leads the patient to appreciate a well-used toothpick, the good will certainly overbalance the evil.

In several cases either the food or the toothpick had caused considerable periosteal inflammation; the trouble was relieved by making the V.-shaped space more obtuse.

We speak of self-cleansing surfaces, but must remember that teeth will not clean themselves. We may assist, but cannot, by the exercise of any art, expect to relieve our patients of their part of the work. The constant and faithful use of toothpick and brush, the exercise of care and attention is the price of sound teeth. They may deceive the poor dentist, but Madame Nature never fails to visit with promised and deserved punishment any infraction of her comands. A good honest toothache is very often an excellent "*educator*."

D. A. Eisenbrey recalls the case of three sisters, whose teeth made a fine display of such fillings, performed by the same operator, and who, unfortunately for them and the operator, had to replace them every year for three years, notwithstanding the superiority of such a system.

He (Dr. E.) replaced them one year ago, but not in the same manner as heretofore. He made free separations up to the necks of the teeth, but not through to the gums, and in such a manner that after the teeth were filled, it would protect the filling, and not the filling the tooth. In the former case the tooth will be preserved by the filling; while in the latter the filling will be the means of fracturing and breaking the tooth, but not preserving it as was intended.

The majority of teeth are in a sound and healthy condition, but, owing to the close and crowded position in the mouth, and the impossibility at most of keeping them clean, their substance soon breaks down, from the presence of decomposed food and the constant abration occasioned by mastication.

When we find out the cause of a disease in any portion of our body, we remove it, and then the organ will regain its normal condition, if the destruction is not too great. Who, in the name of reason, when having broken-down teeth under his care, and knowing the cause of such a state, will put them in the same condition as before to preserve them? The cases that will admit of contour fillings and do well are very few.

As a rule, he prefers to have the teeth touch each other at a point near the gums, making the separation straight through from the labial and buccal to the palatine or lingual surfaces, rather than to separate entirely from the palatine, and let the whole buccal surfaces touch, making a double V-shaped face. He thought that when teeth were so treated and filled they would be preserved for years.

Prof. Stellwagen has not changed his opinion of the practice of removing superficial caries. Daily the conviction as to its efficacy was confirmed, and yet he could not lay down rules which should govern all cases. He regretted to see the disposition in his profession to treat men as if they were mere machines, without the power of judging for themselves.

The difference of our patients necessitates the most careful choice of means for cure; and while in some cases the denudation of the dentine by filing would be malpractice, in others it is the best treatment at present known.

Dr. Gilmour had had occasion to obtund sensitiveness in dentine as the result of very moderate separation, which in other teeth would have given no inconvenience, and would even admit of a freer use of the chisel without discomfort to the patient either during or after the separation; would follow no system of separating merely as mechanical effort, but deviated whenever judgment would suggest a change.

He expressed himself as a firm believer in the separating of the oral teeth by chiseling the palatine faces—preserving, however, all the labo-approximal contour of the teeth.

Dr. Neall read a paper on "Alkalies and Alkaline Saliva."

Prof. Stellwagen occasionally met with cases where the dentine, after exposure to Alkaline saliva, appeared to have lost its organized materials, and a white, friable or chalk-like residue remained. He did not think the enamel appreciably affected by such alkalies as are found in the mouth,—no doubt due to the heavy percentage (95 to 99) of inorganic matter in it. The layer of dentine, with its ramifications of tubuli, and

the membrane immediately under the enamel, are largely made up from the organic kingdom; and there is but little doubt that strong alkalies, admitted to this through fissures or openings in the latter covering, would unite with and wash out much of the animal matter. In such cases the enamel, losing its natural support, would be readily broken down by mechanical action.

When the saliva is found to be readily drawn out in ropes or strings, offensive in odor and alkaline in reaction, with the gums tumid and flabby, he had prescribed an acid mouth-wash recommended by Prof. Garretson; its use gave happy results, without any sign of injury. Subsequent trials of the same stimulants, without the aromatic sulphuric acid, he thought equally satisfactory, and he now rarely made use of it.

It is asserted by some authorities that the vegetable acids produce an alkaline constitutional effect, and pure lemon juice is a well-known remedy for rheumatism, which disease the antacids will relieve. If this be true, it is probable that the mineral acids will operate best to change the oral secretions.

Dr. Bonwill. The use of the galvanic battery in sensitive dentine has been absorbing some of my time since March. I have made use of it in about forty cases, and, with the exception of a few children, I have had most gratifying results. These cases were intelligent patients; and after trying the current from first one pole, then the other, and in various ways endeavoring to cheat them,—one by detaching so that no current could pass,—I found that, whether anæsthesia was produced or not, one thing was certain,—the patient would not allow the excavation to be continued without the direct application. I noticed that after the current had been passing for a few minutes through the excavator, and then breaking the circuit, the dentine was the same as when the current was passing, but remained so only a few moments, returning to more than its former sensitiveness. As soon as the circuit was completed, after holding the excavator for a few minutes to the tooth, the anæsthesia was again complete. This would seem to prove that electricity is a temporary local anæsthetic, or why should the obtunding still remain after breaking the currents?

No subsequent ill effects have been noticed. Until I have made further research, I prefer to say no more as to its application, as it is one of those subtle agents that cannot be handled by the majority of practitioners without explicit rules. The general condemnation of its use in extracting suggests that I be prudent in what I may say at this time. So soon as other cases may be experimented upon, proving its further practical results, I shall make it known to the dental world.

Prof. Stellwagen. If an automatic mallet can be made that will prevent the supposed necessity of exposing the infirmities of patients to

third parties, and at the same time relieve the weak or sickly operator from the expenditure of force in filling, it would be well.

Patients are no less entitled to privacy during dental than medical treatment. It is often necessary for the practitioner to hold strictly to the Hippocratic oath, in order to gain that thorough knowledge of the general health of the patient, which is essential for the cure and prevention of disease.

Prof. Stellwagen had used the galvanic current upon teeth, and found that it caused uneasy or painful sensations, but he expressed a determination to try it again.*

Seriously, he thought the success attending the use of galvanism for sensitive dentine was owing to the courage instilled by the mystery, and the light, quick cuts with sharp instruments, together with the general tenderness of the operator.

Dr. Gilmour spoke of the relative liability of teeth to discolor from given causes. 1st. Superior centrals from blows. 2nd. Superior laterals from infiltrated putrescence as the result of pulps dying from thermal changes. 3d. Bicuspids, same cause as laterals, with the addition of local stains from amalgam fillings;—laterals, however, being the most frequent of all. He also mentioned the air-drying method as practiced by Dr. Flagg and himself in ordinary daily operations. He thought the term *bleaching* rather obsolete, as the use of medical agents was displaced by the air-drying process under the rubber dam, which proved very satisfactory after two years' testing.—*Cosmos*.

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* He states that he has since tested with both poles and different degrees of strength, during the removal of sensitive dentine from the teeth of patients. Three (physicians of experience and skill) pronounced it to be a decided addition of pain or discomfort to that of cutting; one patient rather favored it, as he had a "great respect for electricity;" and the fifth, a hysterical young lady, seemed much pleased with the noise of the machine, which diverted her attention from the operation, leaving her unconscious of the pain. There was no difference of expression when the instrument was attached to or disconnected from the battery, so long as she was allowed to hold the handle and listen to the buzzing. Two others liked it; and one (a nervous lady) thought it possibly relieved the pain, but was soon tired of holding the handle.

There did not seem to be any advantage gained by connecting the instrument with the battery, as the application of the current to the cheek or hands was quite as effective.

SELECTED ARTICLES.

ON NITROUS OXIDE.

We publish the following letter, which is a type of many which have been received the past few years:

To the Editor of the Dental Times:

Dear Sir:—I have recently determined to administer nitrous oxide, and have procured a large gasometer, capable of holding 40 gallons of gas over a corresponding quantity of water. I have given the gas several times, but am not quite satisfied with the results. I have administered the gas from a seven-gallon rubber bag with a plain mouthpiece—the patient breathing from and into the bag. I have in many cases had the following symptons: blueness of the lips, lividity of the countenance, muscular twitching, irregular respiration, and an appearance as if the patient was about to have a convulsion. This condition has in all cases come on suddenly, and, upon removal of the bag, the person has quickly recovered consciousness, and has appeared to suffer no bad after-effects—except that in a few cases there has been a desire on the part of the patient to take every few moments a long breath, as if the lungs were not able to take, in natural respirations, the requisite quantity of atmospheric air. This has, however, passed off in an hour or so after the administration of the gas. In one case the patient, a strong healthy woman of 23 years of age, went from my office well, or, at least, apparently so, but was taken the same night with congestion of the brain—so pronounced by her physician—and continued very ill for some weeks; recovered eventually, but still suffers with "low spirits and headache:" lays her sickness and unpleasant feelings "to the gas." I would remark that the gas used, in all cases was *fresh*, and washed according to your advice in your work* and your oral teachings. My object in addressing you is, to ask you if you had met with such an experience. 1st. So far as symptons detailed during time of administration. 2d. Have you noticed any unpleasant results immediately after its exhibition? 3d Have you met with, or have you heard of any bad results following the administration of gas, say several hours or even days after, that might be reasonably traced to the ill-effects of nitrous oxide? 5th. How long will gas keep useful over water? By answering these questions you will confer a favor, for which I shall tender you my warmest thanks.

Respectfully yours,

———.

We take pleasure in answering the above communication, for it enables us to point out to *many* the reckless manner in which gas is administered—the popular idea being, both by dentists and physicians, that gas is perfectly harmless for any and everybody—one operator alone stating that in "four years," he had operated on 15,800 patients, which, allowing the average to be four teeth from each individual, would make a sacrifice of 63,200 teeth or roots. But it is not of this wholesale extraction to which we shall now refer, but shall remark, that the selection of cases for the administration of nitrous oxide calls for just as much discrimination as is required for the administration of sulphuric ether. And the only advantage which nitrous oxide possesses over ether is, that an anæsthetic condition can be more quickly produced by the first named, and that, when properly exhibited, nitrous oxide is more rapidly eliminated, and hence is well adapted for minor surgical operations. In reply to our correspondent's first query we would state, that we have repeatedly seen the symptoms so accurately described by him as occurring to his patients at time of administration, and though not willing to acknowledge to a constitutional timidity, yet can truly say, that we have never witnessed them without alarm; for such symptoms are sure indications of a carbonized condition of the blood, an unfavorable influence on the medulla oblongata and nerves controlling respiration, and a like "reflex" influence on the cerebro-spinal nerves and nerves of the great sympathetic system. Such involuntary movements, happily described by our correspondent "as an appearance as if the patient was going to have a convulsion," are the efforts made by nature to arrest, modify, or give evidence of the presence of some poison or noxious agent that, if not quickly removed, will overthrow vital force. Fortunately, the alarming symptoms are so marked that the operator quickly removes the bag, and while it may be said the patient is on the brink of the grave the teeth are extracted. This assertion may to some seem extravagant, but we do not doubt that *two minutes* of continued administration of the gas, to a person exhibiting such appearances, would induce a fatal termination. Precisely the same results are induced upon the inferior animals, and if continued beyond this point death ensues. But let us see what is the cause of these untoward symptoms. Nitrous oxide, unadulterated with air, a powerful supporter of combustion, is rapidly inhaled into the pulmonary air cells, through which absorption takes place into the blood with great facility. This blood, surcharged with this great combustible agent, is carried over the system, and, as a consequence, combustion occurs between the remote tissues and nitrous oxide conveyed to the immediate neighborhood by the blood, carbonic acid gas being the result, which is taken up and returned to the lungs, where, if no *valved mouthpiece* is used, it is carried by the exhala-

tions back into the bag to vitiate its contents, and cause the pulmonary air cells to contain, in the course of a few inspirations, a poison gas, a mixture of nitrous oxide and carbonic acid gases, the blood at each inspiration becoming more and more carbonized. While, then, these symptoms may result, even when gas is properly administered from a valved inhaler, allowing none of the respiratory product to enter the receptacle from which gas is inhaled, we have yet, in an extended experience, to meet with such symptoms, and believe *that they are mainly the result of breathing back and forth into small rubber bags*—carbonization of the blood occurring from interference with the endosmotic process in the lungs.

The most bigoted man on the subject of nitrous oxide with whom we ever conversed was an eminent physician of New Jersey, who saw a patient (his wife) take gas at one of the dental slaughter-houses which flourish—to our shame be it said—in all the cities and large towns from one end of the land to the other. This gentleman remarked, that he had never seen one apparently so near death and yet recover. The same lady, on another occasion, took gas from a large gasometer, breathing easily through a tube and valved inhaler, no unpleasant symptoms being present—the countenance, color of lips, expression of eye and hue of skin, respiration and circulation being continuously normal.

We answer question number two by stating, that the involuntary long breaths every few moments were only nature's efforts to overcome excessive waste of parts engaged in respiratory movements, and to supply proper "residuary" air to the pulmonary air cells; or it might be due to the continued presence of an irritant acting by reflex nervous action upon the respiratory nerves. This condition was mainly due to *improper* administration of gas—the person breathing their own exhalations instead of pure nitrous oxide. But there is one objection made by some to the use of the valved inhaler, which we consider should have no weight when safety, comfort and cleanliness call for such a method of exhibition; it is that "patients breathe more gas," and "do not stay so long in a state of narcotism, hence have to administer gas over and over," which is true; but if safety is not to be considered carbonic acid gas might be used, as it is just as rapid in producing narcotism, and the effects would be continued longer than when diluted with nitrous oxide.

In reply to question No. 3 we would state, that we have heard of many cases of sickness following the administration of nitrous oxide. Several such cases have been published. We quote one.

"*Coma, from Nitrous Oxide.*—By Prof. Thomas, Bellevue Hospital, Dec. 11th, 1869.—E. McLester, 19, domestic, Ireland, admitted to Hospital 10th December. She was in perfect health up to Tuesday, 7th

December, when she took nitrous oxide, from the hands of a dentist, previous to having a tooth pulled. She has been comatose ever since, says there is nothing the matter, but has a distinct remembrance that she had or was about to have a tooth removed, and, from repeated exclamations of "my tooth," seems yet to suffer from it. In answer to questions as to where she is, she replies "at my mother's." She presents a robust appearance, remains quiet, with a constant tendency to lapse into unconsciousness, from which a considerable amount of shaking is necessary to arouse her. Questions have to be repeated, and elicit imperfect and unsatisfactory answers. The pulse is perfectly natural. She had double strabismus, which has now disappeared. The face gave the impression of being flushed; but she seemed naturally florid. *Treatment.*—Let her alone until she recovers. I have known a case in which the coma lasted four days. This patient went out perfectly well a few days afterwards."—*Medical Gazette.*

[Such cases do not always come out of it when left alone. Miss D. Smith informs me that a lady, at Belvidere, took *gas* a few months ago, who was affected in a similar manner, but died on the 3d or 4th day. The dentist who administered it took up his bed and walked, and has not been heard from since. The dental and medical journals relate numerous similar cases. In view of these facts we cannot credit the sweeping statements of Dr. Colton, that his association has administered it in 75,000 cases without accident.]—*The Dental and Medical Journal.*

We would further remark, that we are keeping a record of cases, well authenticated and markedly significant, of bad results from administration of nitrous oxide, and will thank our friends in different sections of the country to forward *such cases* to our address, that they may (without giving publicity to names of patient or operator) be published to warn the dental public against the great error that nitrous oxide can be given to any and everybody. And doubtless many would be surprised at what evidence has already been accumulated.

To question No. 5 we would reply, that we have repeatedly given gas six weeks old; and on this day, September 25th, have given gas twice from a gasometer filled August 5th—narcotism being in both cases readily and satisfactorily induced in less than two minutes. But gas will not keep this long unless the gasometer is perfectly air-tight, and the water should not be removed from the gasometer, unless gas is made very frequently, oftener than once in one or two months. We have answered our correspondent at length, though we have not touched upon points which we consider of vital importance. From an extended acquaintance and correspondence with dentists, we believe the *rule* is to use the rubber-bag and old-fashioned mouthpiece, and that valved inhalers are the exception.

That it is the rule to give gas to everybody, young or old, sick or well; but we would urge the most careful discrimination in all cases, rejecting those where doubt exists or where other anæsthetics would be contra-indicated, adopting the remark which has been made of mercury—"That it is a two-edged sword, capable of doing a great deal of good or a great deal of harm."—*Dental Times.* G. T. B.

INSERTING RUBBER DAM.

BY EDWARD J. KING, DECATUR, MICH.

Having traced several cases of absorption of the alveolus to injury done the dental and alveolo-dental periosteum by heroic wedging and ligatures in the application of rubber dam, I was induced to seek for some less difficult and severe method. About a year since, the plan I am about to describe suggested itself to my mind, and I have used it up to this time with increasing satisfaction to myself and patients. I can place it *in situ* in from one to three minutes, without the aid of an assistant. Make two perforations in the rubber about the usual size and distance apart, if the cavity to be filled is an approximal one; if on the crown, one only is needed. Prepare two soft silver or hickory pins (I prefer silver wire, flattened to the required thickness), of sufficient length to pass between the teeth and project three-sixteenths of an inch on each side. If the cavity is on the grinding surface, the pins are passed through the interstices, close to the gum of the tooth to be filled. The rubber is then drawn on to, say, the lingual point of one of the pins. Next draw it *over* the interstice and insert the labial point; treat the second pin in the same way, both pins and the tooth now being inclosed in the same perforation.

When the cavity is on the approximal surface, it is necessary to include two teeth, with two perforations, and a *wedge* placed below the cavity. The ends of the pins should be nicely rounded to prevent their cutting the rubber.—*Cosmos.*

The following extracts from valuable papers by two eminent Dentists, one of Chicago, the other of New York, will be interesting. We leave our readers to form their own conclusions.

HEAVY AND LIGHT FOILS.

By G. H. Cushing, D.D.S., Chicago.

To reconcile the claims of this great revolution in practice with the principles of philosophy will be to make clear to our minds the proposition that foil of the thickness of No. 60 is better than No. 2 for the purpose

of filling teeth, that it is equally manageable, is applicable in all cases where No. 2 was formerly considered to be almost the only thing that could be used, that it is more adhesive, welding more perfectly, with less force, and making a more solid filling. I think this can be established. In order to do this, we must go back to the examination of how No. 2, or other low numbers of foil are manipulated, and in doing this, I think we can easily explain away a fallacy which has prevailed regarding the use of low numbers of foil generally.

The low numbers of adhesive foil are used by either rolling it into pellets of various sizes, into ribbons and ropes of varying diameters and lengths, or folded upon itself with more or less irregularity, into strips and blocks. I think it may be safely stated that the foil, as it is generally prepared for use, presents a mass folded upon itself more or less irregularly, varying from ten to twenty thicknesses of the original foil, according to the sized pellet, strip or block. Now, when we use this are we not practically using Nos. 20, 40 or 60? In fact, we are using a heavier foil than the number of folds represents, for it is so folded upon itself in such irregular shape that presents an endless succession of surfaces and angles, braced in every conceivable direction, one against the other, rendering the mass more resisting than a solid sheet would be, which represented the number of folds we have in our pellet.

Herein, I think, lies the fallacy which has prevented many from seeing anything reasonable in the claims made for the heavy foils, viz: in ignoring the fact that we have practically been using heavy foils, though composed of a succession of layers of lighter numbers; and I think it must be readily seen that if we can pack twenty layers of No. 2 or 3 satisfactorily, we can equally well pack a single layer of No. 40 or 60 in the same place, and it certainly is sound philosophy to say that it can be packed more easily and perfectly, for the reasons mentioned before, viz: that in folding the lighter numbers upon themselves, no matter how egularly, we have a largely increased resistance to overcome, and largely multiplied surfaces to weld together.

Now, as it is well known that the less gold is hammered or beaten, the more it retains of the properties of adhesiveness, softness, tenacity and pliancy, I claim that philosophy clearly establishes that the thicker the gold (within certain limits) which can be used, the more perfect will be the welding, and the more solid will be the filling. Thus much for the philosoph ysustaining these claims.

Now, to consider briefly what experience teaches concerning the use of heavy foils:

1st. That as high as No. 60, they are applicable in all classes of cases where the mallet can be used, even in the most frail teeth, where the inexperienced in the use of these foils would think they surely could not be used; but experience seems to prove that they are peculiarly adapted for use against frail walls, accommodating themselves to their irregularities with great facility, and requiring but slight force to place them properly, and in fact giving immediate support to the frailest walls, and thereby rendering the operation less difficult and less dangerous.

2d. No. 60 fills retaining points better than any other number, making more certain and solid anchorages than the lighter foils.

3d. They are much more adhesive, and when properly packed must make a stronger as well as a more solid filling, while owing to the peculiar softness, as well as a great adhesiveness of the numbers as high as 60 an upwards, they require really less force to condense them thoroughly, than the numbers from two to ten.

4th. In binding they are invaluable: that is, where the cavity is approximal and the crown compounded, and the approximal portion can be but poorly anchored, as is sometimes necessarily the case, while a good anchorage can be secured in the crown—in such a case, by securing a strip of No. 60 or 120, in the crown, and carrying it over to the approximal portion, the filling can certainly be made more perfectly secure than with light foils.

5th. In building out and restoring the contour, they make vastly stronger operations than anything of the kind done with the lower numbers could possibly make.

6th. They spread laterally, in condensing, to a much greater degree than the light foils; and, finally, to sum up in a word their merits, they produce, when properly packed, the most perfect operations which have yet been attained.

With reference to the method of manipulation, it is difficult to write satisfactorily; one observation of an operation would teach more than twenty pages of written instructions, and I will only briefly state some of what I consider the chief points to be closely observed. The foil should not be handled with uncovered fingers; it may be cut into pieces varying from one-fourth to three-fourths of an inch square, or into strips of proper width and length to suit the case. Where easy access is to be had to the cavity, the strips may be used to excellent advantage, condensing each layer across the whole surface, and folding the strip upon itself, thus saving time. The retaining points should be carefully filled, and the foil packed carefully from one retaining point to the other, securing and preserving as nearly uniform and plane a surface as possible, and the foil should be carefully condensed at and over the margins of the cavity, layer

by layer. Care should be observed not to allow the foil to become very much crumpled or folded very irregularly upon itself. Rather small points should be used in packing it, as with them less force of malleting is required than with the larger points, while in finishing the operation of packing, great care should be observed to condense the entire surface thoroughly.

It must not be supposed that operations are greatly facilitated by using the heavy foils. My own experience thus far is, that it requires longer to perform thorough operations with the heavy than with the light foils; but that should not weigh against them when the greater superiority of the operation is considered.

I have thus far spoken chiefly with reference to No. 60 and higher, which I consider as most desirable in a majority of cases, though Nos. 20 and 30 may be used to advantage in large fillings, for the principal part of the operation, as those numbers, when the cavity is favorable, can be packed more rapidly than the higher, while the heavier numbers should be used for the margin and finishing. I would also recommend these numbers to beginners for their experiments, from which they will soon feel their way to the higher grades.

Before concluding what I have to say upon the subject of heavy foils I would remark that since writing this paper I have been using foil of Nos. 30, 60, 120 and 240, which were not hammered at all, but produced by rolling, and they are certainly softer and more manageable than any I have used made by the ordinary practice of beating, and I think more adhesive. They seem to me forcibly to corroborate the statement made in the first part of this paper, that " perfectly pure gold, properly treated and made thin by rolling, possesses the essential properties of an adhesive foil in the highest degree." This foil also possesses the advantage of presenting a dull surface, an advantage which those who have used the heavier bright foils will not fail to appreciate.

In conclusion, I would earnestly commend the heavy foils to all who desire to secure the highest results, feeling confident that if these foils are fairly and properly tried, they will commend themselves far beyond anything that I could say in their favor.

LIGHT vs. HEAVY GOLD FOIL AND CRYSTAL GOLD.

By Frank Abbott, D.D.S., New York

I have carefully conducted a series of experiments in the following manner and with the following results: I first had several cavities prepared in steel of precisely the same size, to resemble as nearly as possible cavities in teeth. In order to accomplish this more perfectly, several fine

cuts were made in each with a graver, to represent the cuts of excavators; at the same time they were so arranged that the entire mass of each plug could be removed without marking its surface. This done, gold of the following numbers was then prepared (taking care that the pieces should all be as nearly the same weight as possible), viz: Nos. 2, 3, 4, 5, 6, 10, 20, 30, 40, 60, 120, 240, adhesive foil, and Nos. 3, 4, 5 and 6, soft foil and Watts' crystal gold, No. 1.

An automatic mallet, with the same weight of stroke, and the same point, was used for each operation. The time occupied in condensing each was as follows:

No.	2, adhesive	14	minutes.
"	3, "	14	"
"	4, "	14	"
"	5, "	16	"
"	6, "	17	"
"	10, "	18	"
"	20, "	21	"
"	30, "	24	"
"	1, Watt's crystal gold.	14	"
No.	40, adhesive	28	minutes.
"	60, "	31	"
"	120, "	35	"
"	240, "	36	"
"	3, soft or non-adh.	11½	"
"	4, " "	12	"
"	5, " "	14	"
"	6, " "	16½	"

On removing the plugs, after their surfaces were finished, I found that Nos. 3, 4, 5 and 6, non-adhesive foil and the crystal gold plugs all presented the appearance of having been perfectly adapted to the cavities in every particular, while all the other cavities were more or less imperfect, even the very light Nos. 2, 3 and 4 presented innumerable minute openings into the body of the plug, and the fine cuts made by the graver were not perfectly filled, and as the gold increased in thickness, the imperfections increased correspondingly, so that from No. 10 to 240 there was hardly an approximation to adaptability. The cuts of the graver were not filled; every point where the gold was folded in the least an open space was left; in short, they presented an appearance which might very appropriately be called the height of *imperfections*.

The weight of each plug was as follows:

No.	2, adhesive	15¼	grains.
"	3, "	16	"
"	4, "	15½	"
"	5, "	16	"
"	6, "	16	"
"	10, "	14½	"
"	20, "	14	"
"	30, "	15	"
"	40, "	15	"
No.	60, adhesive	13½	grains.
"	120, "	15	"
"	240, "	15	"
"	3, non-adhesive	17	"
"	4, "	17	"
"	5, "	17¼	"
"	6, "	17	"
"	1, crystal gold	14½	"

With the above facts before us what becomes of the assertion that with heavy gold "time is saved;" "that more perfect operations are made,'

and " that more in weight can be packed into a cavity than can be of soft or non-adhesive gold of light Nos.? These questions I leave for the advocates of heavy and crystal gold to answer. In summing up this matter it seems unnecessary to add that the light Nos. of soft foil present decided advantages over any other material experimented with.

1st. It requires about one-third the time under the same circumstances to manipulate them.

2d. Cavities are apparently perfectly sealed with them, while all the others, except crystal gold, present more or less imperfections; and

3d. From fifteen to eighteen per cent more gold in weight is, with the same pressure, packed into a cavity.—*Register.*

BIBLIOGRAPHICAL NOTICES.

TRANSACTIONS OF THE SIXTH ANNUAL SESSION OF THE ILLINOIS STATE DENTAL SOCIETY, MAY 10, 1870.

Through the attention of the indefatigable Secretary, Dr. C. Stoddart Smith, of Springfield, we have received a copy of the above, forming a volume of 112 pages. The several essays and the discussions thereon, bear testimony to the great interest taken in the objects of the society by its members. It is worthy of note by our Canadian societies, and ought to stimulate them to increased action, that this society consists of a few members, and at the session in May had only twelve present; yet those twelve, by each assuming a share, have done great credit to their society and themselves by their associated results.

DICKINSONS DENTAL PLATE REGISTRAR. (*See Advertisement.*) In the August number of this Journal, (vol. 1) we gave a form of a Laboratory Record, which we found very convenient, but the above is so great an improvement that we would never think of using the home manufactured registrar again. It is an unfortunate fact that the dentist is subject to many petty annoyances and disputes, arising from short memories, both on the part of dentist and patient; and the intervals elapsing between the extraction of teeth, insertion of temporary, then of permanent sets, naturally confuse the memory, and a record such as the above is essential. It is very neatly arranged, giving separate columns for name, date, number of teeth extracted and number to be made, amount

paid, base and price of temporary, time temporary set was made, base, and price of permanent, &c., &c.

It will be interesting as a record of the proceeds of the mechanical as distinct from the operative branch.

EDITORIAL.

A DOMINION FEE BILL.

Several subscribers having requested us to publish a Fee bill adapted to the Dominion, we venture to draw up the accompanying tariff, approximated as near as possible to the fees received by respectable dentists in Hamilton, Toronto, Ottawa, Montreal, Quebec, and Halifax.

We think the profession in Canada generally, should take a decided stand at once, and demand fair remuneration for their services; for there is no question but, that while for some few operations, we are adequately paid, we are very badly paid for the largest portion of our work, and *not paid at all* for services occupying time, which neither physicians nor advocates would render *gratis*. There is no use mincing this matter of fees, and pretending we do not feel the degrading tendency of "cheap dentistry," accompanied, as it invariably is, by inferior work, and discredit upon the craft. Unless the cheap dentists assume to be a new race of philanthropists, we cannot disguise the fact from ourselves that they border upon empiricism; and, from our knowledge of human nature, and personal acquaintance with many of these men and the work they impose upon the public, we do not believe that they try to work honestly, or that they are so obtuse as to be ignorant of their imposition.

Some operators can demand more for their services than others, because of the infinite superiority of their work, but on an average they demand more than two dollars for small gold fillings, and will not make single vulcanite sets less than forty dollars. But an ordinary good dentist anywhere in Canada, does himself an injustice by charging only one dollar for the former, and twenty for the latter. This question might be discussed *ad infinitum*.

We would suggest preliminary associated efforts in every city, town, and village in the Dominion where two or more dentists reside, so that, instead of *confrères* "cutting each others throats," as it has been called, some uniformity may be attained, and the degrading effects of the present system of fees removed. It would tend to improve the class of work made, and what is done would be better done when a dentist is paid ac-

cording to the value of the work, rather than the cost of material,—in fact paid as a *professional* man instead of a tradesman.

This tariff is suggested as the leading prices; and it is further suggested that country practitioners might accept it as it stands with an understood discount of fifty per cent. The cost of living, office-expenses, &c., is about fifty per cent more in the cities and towns than in the country.

B.

Gold Fillings (small)	$ 2.00
do do large	2.50 to 10.00
Compound do do or Pulp Cavity and Crown	5.00 to 25.00
Temporary and other fillings	1.00 to 2.00
Reducing sensitiveness previous to filling	0.50 to 1.00
Separating teeth previous to filling	0.50 to 1.00
Removing Superficial Decay and Polishing	0.50 to 3.00
Treating Exposed Pulp and Filling Temporarily	1.00 to 3.00
Destroying and Removing Pulp	0.50 to 2.00
Scaling and Polishing Teeth	1.50 to 4.00
Treating Abscesses and Diseases of Gums	1.50 to 10.00
Extracting each Tooth	0.50
Extracting each Tooth at night or by the use of Anæsthetics	1.00 to 1.50
Each Additional Tooth	1.00
Professional Visit at Residence (extra)	1.50 to 4.00
Pivot Teeth	4.00 to 10.00
Upper or Lower Set, on Gold	60.00 to 80.00
Upper or Lower Set, on Vulcanite, Gum Block Teeth	30.00 to 50.00
Upper or Lower Set, on Vulcanite, Plain Teeth, Permanent	25·00 to 30.00
Temporary Sets, on Vulcanite	20.00
Partial Sets, on Gold, per Set	5.00 to 8.00
Single Tooth, on Gold	10.00 to 15.00
Partial Sets, on Vulcanite, per Tooth	3.00 to 8.00
Single Tooth, on Vulcanite	4.00 to 8.00
Regulating Teeth	10.00 to 100.00

Consultations, according to time occupied.

MAKE A BEGINNING.

An "itch for writing," is an abhorent nuisance, when a writer has really nothing to say, and is determined to say it. But dentistry is so eminently practical, and there is such difference in the ways of working, that hardly any two dentists can talk together for five minutes, and not fail to learn something worth knowing from each other. Now if this is

so, how is it that this Journal is not "deluged" with practical contributions from all parts of the Dominion? We can only attribute this reticence to the fact, that many men can say in conversation what they think they cannot put on paper, especially if for publication, and to the other fact that many who have never yet contributed their practical knowledge to a Dental Journal dread to begin.

Now, we are quite sure, that nearly every dentist in Canada has some practical ideas and methods of working of his own, which are well worth publishing, and we ask one and all to make a beginning, and do the best they can: many can write well who are not aware they can, because they have never tried. Those who write, however poorly, and who have anything worth saying to say, will receive any assistance from us, in the way of revision, they may request.

B.

ANOTHER REMINDER.

We sent the greater part of volume one to every dentist in the Dominion, whether paying subscribers or not, so that many received it for nothing when the subscription was a dollar higher than now. We do not desire or expect to make money out of the JOURNAL;—indeed we lose considerably by not attending more to our legitimate business: but we do desire and aim to make the only dental periodical in Canada creditable to the Canadian profession. Every Canadian dentist should support this undertaking, and remit his subscription promptly. Our best supporters are really those who are the best pay. The base matter of "dollars and cents" is a necessity of existence.

Every other dental journal enforces the cash in advance system. We commend the following extract from the last *Cosmos* to the attention of our subscribers, and we take it for granted that all who did not return No. 1 are legitimate subscribers:—

"We shall, as hitherto, adhere to the system of cash payments in advance, experience having shown that *in no other way can heavy loss to the publisher be avoided;* and moreover, it is appreciated and prized most, when promptly paid for."

"THE EXPOSITOR OF THE ABUSES OF DENTISTRY."

"H. M. Bowker, Esquire," as he signed himself in his first abusive article in the "Canada Medical Journal," has again dipped his pen in sunbeams. The distortion of other writers and the twisted quotations again prove that Mr. Bowker's object is not so much to develop the truth as to damage the professional character of his *confrères* and curry favor or himself with the medical profession.

We will shortly publish some correspondence and details of interest to the dental and medical profession, and especially to "H. M. Bowker, Esquire."

DR. W. R. PATTON.

The profession in Quebec province will be sorry to learn that they have lost one of their most promising members, in the peason of Dr. W. R. Patton, of Quebec city, who has been induced by very flattering offers to settle in Cologne, Germany. His friends will, however, join with us in congratulating him on this marked appreciation of his abilities as an operator, and in wishing for him a safe arrival and a successful career.

Dr. Patton adds one more to the list of *Canadian* dentists who have decided to carve out a reputation for themselves in Europe. We trust he may be as successful as his predecessors; and do credit, as undoubtedly he will, to the good old city of Quebec, and the dental profession of Canada.

He has kindly consented to correspond for the Journal, and we will anxiously look forward for "letters from our German correspondent."

B.

MISCELLANEOUS.

He who fails to try is sure to fail.

Polish depressions in rubber plates with felt cones. They are admirable.

Several cases are reported where artificial sets adapted to one mouth, have been found to fit other mouths.

"*Eurydamus*, a wrestler of Cyrene, in a combat, had his teeth dashed to pieces, which he swallowed without showing any signs of pain, or discontinuing the fight."—*Ælian V. H.* 10*c.* 19.

"Cheap Dentistry is like dollar stores and gift enterprises, you may possibly get the value of your money, you most probably will not. Now and then a dollar may buy ten dollars worth, but in the long run, the inevitable laws of barter will prevail, and the dollar will only buy the dollar's worth.

A dentist who is mean enough to get work by underbidding, will be dishonest enough to make it correspond to the price."—*Dental Times.*

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ORIGINAL COMMUNICATIONS.

TREATMENT OF ALVEOLAR ABSCESS AND FILLING OF NERVE CAVITIES.

BY FRANK FRENCH, M.D.S., ROCHESTER, N. Y.

The old saying, "great effects result from little causes" is fully exemplified in our every day dental practice, as most of the diseases we are called upon to treat are the effects of some cause which, though perhaps minute, in its effects has been very destructive. What we need a more thorough knowledge of, and to study so as to endeavor to understand as fully as possible, are the relative relations of cause and effect. When we understand this, we have the key-note, as it were, for treatment, as generally if we remove the cause, nature will do the rest with very little if any, assistance.

To successfully treat a disease of any kind, it is necessary to determine, if possible, three things,—1st. What was the cause which produced it? 2nd. Does the cause still remain? 3rd. What are the best means to restore the part or parts affected to a normal condition? Therefore, in the treatment of alveolar abscess, let us first inquire what causes it. Inflammation of the alveolo-dental periosteum is the immediate cause of it, but the inflammation of this membrane may result from a variety of causes, such as a violent fall or blow upon the tooth, irritation from a tooth which has lost all vitality and recuperative power, by a piece of gold or any foreign substance being forced through the end of the root in filling, by inflammation and suppuration of the pulp, and by an accumulation of purulent matter in the root, resulting from a dead nerve being allowed to remain there. These are some of the primary causes which produce the effect known as alveolar abscess. But as we are rarely called upon to treat it until it has reached the suppurative stage, and as it is not properly alveolar abscess until then, it will be sufficiently accurate for our purpose to say that it is caused by the death of the

nerve and the breaking down of the tissues. True it may not have arisen from an injury to the nerve, but it always involves it, and after it is dead it in turn becomes the source of irritation, by the purulent matter which is secreted there, and which, having no other outlet, finds its way through the fistulous opening in the gums; so that with the single exception of those cases which are caused by pieces of gold or any foreign substance being forced through the end of the root in filling, we may safely class all the rest, whatever may have been their origin, under one head for treatment, viz., devitalized nerves. This point being determined, the next is, does the cause still remain? Yes, in all cases we either find the dead nerve, or a secretion of purulent matter caused by the decomposition of it.

Now, having ascertained the cause, the next step is what? If we have a sliver in our finger, which produces a festering sore, common sense would say, remove the sliver which is the cause, and it will get well. If we find that a dead nerve produces alveolar abscess, clearly the first thing to do is to remove that nerve. It may be asked why should a dead nerve produce this? Not to go into a lengthened detail of the various stages of the disease, I would simply say that when a nerve is dead it is a foreign substance, and as nature tried to throw off the sliver in the finger by festering, just so nature tries to throw off the dead nerve by ulceration. The first step, then, will be to make an opening into the nerve cavity, in such a manner that it can be thoroughly cleansed of all impurities. This should be done in *all* cases of treatment of alveolar abscess, with the exception of those cases where the nerve cavity has already been filled, and has been followed by ulceration, and even in such cases, I prefer to remove the filling and treat through the root, for though many claim to be successful in treating such cases through the fistulous opening in the gums, I confess that I have not; so that whatever else may have caused it, I would say make an opening directly into the nerve cavity. No matter if there is no evidence of decay in the tooth, do not be afraid of finding a live nerve, for you can mark it down as an invariable rule, that where you find a tooth connected with an abscess that has been or is discharging, you will always find the nerve *dead* in that tooth. But always be very careful that you have the right tooth, or you may find a live nerve. A spicula of ice applied to a tooth is a fair test of the vitality of the nerve, the absence of sensation indicating no vitality. Most of the cavities of decay which reach to the nerve, not only in the incisors and cuspids, but also in the molars, are on the approximal surfaces, and the attempt to treat the nerve cavity through these cavities is one cause of many failures. The nerve cavity

in the incisors and cuspids is usually in a direct line with the crown of the tooth, and in the molars at a slight angle, and to attempt to treat and fill it thoroughly from an approximal cavity, is very much like trying to shoot around a corner.

Make the opening in a direct line with the nerve cavity, in the incisors and cuspids make it on the palatine surface, in bicuspids and molars right straight through the grinding surface, usually extending the approximal cavity till it unites with it. As there are exceptions to all rules, so there will be to this, as, for instance, where incisors were very badly decayed on both approximal surfaces, it would weaken the tooth too much, but the good sense and judgment of the operator will tell him what is best to do. We are now able not only to get at the cavity, but what is of equal importance, to see what we are doing, and though I am a firm believer in "walking by faith, not by sight," yet I believe a man can fill a tooth better by *sight* than by faith. Next, do not try to use too many instruments, but with those that are adapted to the work, and can be used to the best advantage, and a little experience will show which those are; remove every portion of dead nerve or of matter that is there, and wash out the cavity thoroughly. If the patient is of good constitution and health, and at the period of life when the forces are rather on the increase than diminishing, and if the abscess be not one of long standing, the only other treatment that will be required will simply be to fill the cavity in the tooth (not the whole nerve cavity) loosely with cotton, so as to keep all foreign matter out, but not so closely but that any matter which may form may drain off through the cotton, and at the same time place a tent of cotton in the fistulous opening in the gums, so that as it heals it may heal from the bottom. The cotton will require changing every day or two, and the cavity cleansing. The theory of this is, and it is a theory that can be reduced to practice, that by removing the dead nerve which was the cause of the abscess, nature then takes up and perfects the restorative process. It may take one, two weeks, or, perhaps, several months, to restore the parts to a normal condition, but if we give nature a fair chance she will do wonders.

One of the most successful practitioners in this line, Dr. Flagg, adopts this course of treatment, I believe, almost exclusively.

But we find many cases of so long standing that they have become chronic; are what may be termed sluggish ulcers, and in these nature requires some assistance, in order to stimulate the parts to perform their duty. What is required is a remedy that will arrest suppuration, that is, stimulating, caustic, antiseptic, and that has the effect of promoting healthy granulations, and we find all these combined in carbolic acid,

which is one of the most valuable additions to dental materia medica. I should use it in some cases full strength, in some diluted, as the case may indicate, but generally diluted, by forcing it through the nerve cavity until it makes its way out through the fistulous opening in the gum, and continue forcing it through till it comes through with no appearance of being mixed with pus, then fill the cavity loosely with cotton, and allow it to remain a day or two; if there is then any appearance of pus, use carbolic acid again, but if not, cleanse simply with water, and fill again with cotton, continuing this treatment till the parts are perfectly restored. The carbolic acid should be discontinued when pus stops forming. A saturated solution of carbolic acid and iodine, and also of carbolic acid one part, and glycerine thirty parts, may be successfully used in many cases. Where the ulceration had been going on for some length of time, I should, after treating, fill the root with cotton and the crown with Hill's stopping, and allow it to remain for several weeks to be sure that it has healed perfectly, then, if everything is favourable, remove the temporary filling, and fill with gold.

In cases of long standing there is a tendency towards the recurrence of the disease, particularly in patients of a scrofulous diathesis (and it is with this class that the largest per centage of failures occur), but it may almost always be prevented in the first stages of periosteal inflammation, by giving mercurius vivus in $\frac{1}{4}$ gr. doses two hours apart. In filling roots I prefer to fold the gold in short narrow strips, and then wind it spirally around a fine broach. This leaves it in short thin spirals, and by taking hold of the large end with pliers, the small end may readily be introduced into the extreme end of the root, then with nerve-pluggers condense perfectly, proceeding in this manner till the root is filled. I think that it can be more perfectly filled in this way, because you can always be sure of its being filled to the end, whereas in the ordinary way the instrument is very liable to force its way through the gold and leave portions of the root not filled. I tell my patients before I begin treatment that about 8 per cent. of ulcerated teeth, even after treatment, will be failures, and where we destroy the nerve, about 5 per cent., though in my own practice it is, I think, considerably below this. I have not endeavored in this article to produce a labored theoretical treatise to display erudition, but to give the results of my every day practice.

INFLAMMABILITY OF PYROXYLINE.

BY J. NEELANDS, L.D.S., LINDSAY.

It may not be very generally known among dentists what an extremely inflammable substance pyroxyline is, and how easily a set of teeth may be

destroyed by coming in contact with anything that is ignited. A short time ago an acquaintance of mine came up to the office in the evening, and I took him into the laboratory and showed him the new kind of base I was using for artificial teeth. We each sat down and smoked a cigar. Just as we had entered the hall, about to leave the office, on turning round we observed the room we had just left brilliantly illuminated, almost equal to that produced by the magnesian light. I rushed back and found my pyroxyline plate in a blaze, and being rapidly consumed. On making an examination I discovered that when we left the room I happened to lay a lighted cigar in close proximity to the case of teeth, which set it on fire. It will require some degree of care on the part of those using this material not to allow lighted cigars, matches, or anything of that sort, to come in contact with it when out of the mouth. It might prove somewhat hazardous for an individual wearing a set of teeth made of this material to accidentally put *the wrong end* of a lighted cigar in his mouth!

TO PREVENT RUBBER BANDS SLIPPING.

By X. Y. Z.

In using rubber bands for regulating teeth, it often happens that they slip down too far on the neck of the tooth, and not only cause intense pain by the pressure on the soft and sensitive tissues, but to a certain extent prevent the direct and proper force required, by being so far from the point of the crown. To prevent this slipping of the bands down upon the gum I paste oxy-chloride of zinc between the teeth and where the bands are to go between, and before it hardens slip the bands up into place and into the paste, and adapting them as required, put in more paste keeping all dry until hard. In this way I ensure the steadiness and comfort of my rubber bands, and do not grudge the little trouble of repeating this whenever I have to change them. I find this particularly useful in cases where I draw irregular teeth into position with bands alone.

MAKING AN ARTICULATION.

BY JAS. A. DOUGLASS, L.D.S.

Take an impression in wax of the upper or under jaw, cool it at once under the water-tap, remove it from the cup, and trim off to take the articulation, adding or removing wax as the case may require. The advantages of this method are simply that you can take the articulation at the same time you take the impression proper, while you have not to wait for a plaster model on which to shape your plate, as the above is a

perfect impression of the mouth, and will adhere better than a gutta-percha pattern plate while you are taking the bite. After placing this articulation on the model to make an antagonizer, the outside edges may be stuck to the plaster, and the thick body of wax in the centre removed and replaced with the proper pattern plate.

I may say that I find the plan proposed by you for taking a correct bite, in the first volumn of the Journal, the very best, viz., cutting out a block of the wax over the point of the longest antagonizing natural tooth, so as to see and regulate the exact length of the bite.

DENTAL MISERS.

By C. A. Freeman, D.D.S., Chicago.

In looking over the pages of our dental journals and recalling the names of many whose experience is worth recording, I have often been struck with the backwardness of a great mass of Dentists, who love to hug their secrets to themselves instead of generously imparting any good thing they possess for the benefit of their *confreres* at large. In the dental as well as the medical profession there are practitioners who are shy, and others who are stingy: some who only need coaxing or poking to be drawn out, and others who consistently elude every attempt to bring them "up to the scratch," to use a Western expression. Of the former there is some hope: of the latter none.

The moneyed miser counting and hoarding his gold, is not half so contemptible as the dental miser zealously keeping the little hints and ideas he has discovered himself, or borrowed from other sources. The miser's money will benefit his heirs; but the miser's knowledge and talents are buried with him. These he really "takes away," if he does not reveal them during his life.

I have hardly ever conversed with the humblest dentist on dental matters, without finding out some little idea of work, or point of practice different to my own, and many an idea of incalculable value. Now, I hold that almost every practitioner can contribute in a year at least one or two good hints to a dental journal, which would benefit his *confreres*. One great trouble is that they procrastinate, and fear they will not be able to express themselves in proper form, or clothe their meaning in suitable language. As well fear to speak lest we make a slip of the tongue. The satisfaction one feels at having helped to build up a literature, and to spread knowledge, is infinitely greater than that experienced by the man who contributes mere money to a cause; but the pleasure felt at contributing both, must be experienced to be understood.

I am glad to see that the Dentists of Canada sustain a journal of their own, and that the firm resolution to go ahead and progress has taken deep root. There are always a number who ignore any and every effort to elevate and improve the profession, but whatever their standing they one day have their downfall. There is not a Dentist in the land who can afford to be neutral in any effort made by the profession for reform and improvement, and he is a vain and foolish man who believes he can make such movements appear paltry by holding aloof and refusing participation.

Brethren! do not be dental misers!

REPLANTATION OF TEETH IN CHRONIC PERIODONTITIS.

By W. G. Beers, L.D.S.

About a year ago, Mr. Alfred Coleman, an English dentist, read a paper before the Odontological Society of Great Britain, on the treatment of chronic periodontitis by replantation: a method so novel and bold as to provoke considerable discussion, and induce many, no doubt, to try the experiment.

Mr. Coleman's plan was to extract the tooth, clear away caries and the contents of pulp cavities and canals, wash out with carbolic acid, fill the canals with cotton dipped in carbolic acid, fill the cavity, scrape off all diseased periosteum and cementum, leaving the healthy portions of mucous membrane attached to the neck of the tooth: bathe alveolus and the tooth in a solution of carbolic acid and return the tooth to its socket.

Out of fourteen cases, Mr. Coleman succeeded with nine; operating on bucispids and molars. Last December, I persuaded two of my patients to mortify themselves for the benefit of science and my curiosity, and I extracted and replaced a lower right molar in one case, and a superior left bucispid in the other. The first was for a gentleman, about twenty-five years of age, and was a case, I now consider, I should not have tried at all, as his right cheek was very much swollen and absorption of the alveolus had commenced. However, after I had explained the idea to him, he was anxious to test it, and after following the method suggested by Mr. Coleman, I tried to replace the tooth with the forcep with which I had extracted it, but could not do so; finally got it into place and in about half an hour, my patient had bitten it back into its socket. The difficulty of replacing it caused considerable pain, which I managed to subdue by making him hold bits of ice in his mouth. I also applied ice to the swollen cheek, thinking that there would be a determination of

blood to the parts, from the result of the force exerted and the pain produced in biting the tooth back into place.

An hour afterwards all pain had ceased; the tooth was not tender to bite upon, and was decidedly firm. The swelling had somewhat increased. I painted the gum with iodine and aconite, and instructed the patient to keep ice to his cheek. The next day a slight swelling appeared in the gum opposite the tooth, which disappeared the following day, and in four days all inflammation had apparently subsided; the tooth was useful for mastication, and as firm as any of its neighbors. The second day, my neighbouring *confrere*, Mr. Brewster, saw the tooth, heard the story from the lips of the patient himself, and we both were surprised at the favorable results thus far.

In ten days, however, without any pain or trouble, the tooth got loose, and about two weeks after I had replaced it, I extracted it again with my thumb and finger. The roots were as clean and perfect as when the tooth was put back. The alveolus and gum had absorbed almost exactly as if the tooth had not been present.

The second case was also a failure; the tooth giving so much annoyance after remaining moderately firm for a week, that I extracted it again, with very little force.

Two other cases, attempted December 28th and January 2, up to this date, appear to be progressing favorably. One was a left upper cuspid; the other a first left upper molar. These latter cases, were under more favorable and healthier circumstances than the two first trials. It remains to be seen if they will last.

The question as to the condition and the possibility of vital union between the dead tooth and the living structures offers a wide field for investigation. It can hardly be supposed that new periosteum is formed, though Mr. Coleman cites a case where upon the removal of one tooth tissue was found on the fangs, like organized lymph, which appeared upon microscopical investigation to belong more to the tooth than to the structures around it. The probability is, that it had its origin in the periosteum of the socket. The replanted tooth is devitalized, and a foreign body; but so are many teeth which are not extracted and remain in the mouth for years.

I would not now presume to offer any opinion on the subject; but the profession must certainly be interested in the proposed method, and it would be well for those having an opportunity, to test and investigate the matter in their own practice.

"THE PATENT FLEXIBLE EDGE."

By W. G. Beers, L.D.S.

Among the numerous so called "improvements" recently introduced to the dental profession of the United States, and which have been patented, is one called "Straight's Flexible Edge," consisting of a band of flexible rubber placed around the edge of hard vulcanite sets, and for which is claimed, perfection of fit, and infallible adhesion to the palate.

I do not intend attempting to write any elaborate praise or recommendation of the idea, but simply to place the manner of manipulation before the Canadian profession, and letting every one judge for himself by actual experiment of the merits and demerits of the patent. That the plan suggested is not new has been clearly proven, and we would not be surprised to learn that it has been used years ago in Canada just as proposed by the patentee. I remember seeing a very similar combination of hard and flexible rubber in an obturator, at least five years ago, and several now assert that they have even used the rim as patented, for the purpose of securing closer adhesion of hard rubber sets. In the January number of the *Cosmos*, Dr. S. J. McDougall, of Boston, claims to have taught the method several years ago to his students. The question, however, for us in Canada, is not so much as to priority of discovery, as to the real utility of the rim for practical purposes.

The flexible rubber as sold by the patentee, and which, we believe, can only be obtained from him, is no different to the flexible rubber which can be bought at the depots for the same purpose, except in being divided into strips of the proper width—two sixteenths-of-an-inch. Of course every one can divide the rubber for himself. The process is very simple. First, dissolve some of the ordinary hard rubber in chloroform, and keep well corked. After the plaster model is drawn from the impression, trace upon it the exact margin at which the rubber is to terminate at the back of the hard palate, and around the alveolar ridge. It is advisable to make a thorough examination of the condition of the muscles and their attachment to the lips and cheeks, so as to avoid bringing the flexible rim too high. Particular attention must be paid to this, as the rim cannot be trimmed with the same impunity as hard rubber, and in most cases not at all. Immediately where this rim is to lie, the plaster should now be scraped the width and about the depth of the thickness of the rim to be used, so as to ensure a closer fit. The rim being flexible yields, when hard rubber would not, and what would give pain with the latter causes no trouble with the former. The rim is then stuck to the model with the chloroform and rubber solution, a little at a time, and very closely and accurately; taking care to close up the minutest hole,

lest in packing, any of the hard rubber should get under and destroy the desired elasticity.

Now make the pattern plate of wax or gutta-percha—we prefer the latter—taking care to keep it the sixteenth-of-an-inch from the rim, so as to allow for the usual spread of the hard vulcanite in packing. Fill up the intervening space neatly with wax. The usual process of articulating and grinding on the teeth, may be done at this stage, or before the rim is placed on the model; but any building out of wax or gutta-percha, and final finishing preparatory to putting the case in the plaster should be the last part of the proceeding.

The case is then placed in the first part of the flask, *taking particular care to cover the entire rim with plaster except at the inside edge to be united to the hard rubber.* At the back of the case the plaster is brought over and on the rim, and the grooves for the escape of the hard rubber must be cut in the second part of the flask for obvious reasons. The rest of the work is the same as in ordinary packing.

It will be observed, that the rim is a considerable obstacle in finishing up the set, and that great care must be taken not to damage it by the bush wheels in polishing. Felt cones, for pumice stone and soap, as well as whiting or rouge, are preferable to brushes in polishing sets made in this way.

In repairing, or adding the flexible rim to hard rubber, it must be remembered that it cannot be united to hard rubber already vulcanized. Grooves must be cut in the plate, hard rubber added to unite with that already vulcanized, and the flexible rim placed to unite and to be vulcanized with the unvulcanized hard vulcanite.

I think that the advantages of accurate fit, &c., obtained by this rim, will be lost in the frequent renewal, which I believe will be found to be necessary, and the possibility of the rim becoming porous and offensive after a few month's wear. We know that obturators made of flexible rubber require frequent renewal; and the general success obtained in fitting vulcanite sets without any flexible rim, will only commend this in cases where all other means to retain artificial sets in the mouth have failed.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

Brooklyn Dental Society, Oct. 3, 1870.—Dr. Munroe presented a lad from the Dental infirmary. The case was one of alveolar abscess

of the left inferior sixth-year molar, of twelve weeks' standing. The face was very much swollen, the abscess discharging profusely. He had performed the usual operations of thoroughly opening into, cleaning and dressing the pulp canals, and brought the lad before the society, as he thought it an interesting case for a clinic.

Dr. Atkinson was invited to take charge of the patient, and said this was a case of periostitis from exposure and death of the pulp, resulting in caries and necrosis of the outer wall of the alveolus; the *exciting cause* being death of the pulp; the *constitutional cause*, scrofulous debility. There was vitality enough to develop the temporary teeth quite well.

Necrosis means the death of tissue, soft or hard. The difference between caries and necrosis of bone is simply in extent; *caries* being superficial; *necrosis*, involving considerable territory to a greater or less depth. They both result from deprivation of pabulum to the part. *Ulceration* in the soft tissues is equivalent to *caries* in the hard. Sphacelus, or *mortification* in soft tissues, is equivalent to *necrosis* in the hard.

A certain portion of the surface is now dead over the site of the second or twelfth-year molar, and extending by caries beneath an inflamed involucrum.

There are two ways of treating these cases: the usual one of general surgery,—that is to say, simply waiting the exfoliation of the necrosed part and surgically removing it; and the treatment that I advocate, denominated abortive treatment of caries and necrosis. This divides itself into two methods of procedure—viz., surgical and chemical. The surgical is removing by the knife, burr, file, or rasp, all the diseased portion; the chemical is dissolving the dead portions by acids, and afterwards washing away the *debris* and treating by mild dressings.

This is not yet a sequestrum, but necrosis of the outer plate progressing inward.

First enlarge this fistula with tents of cotton wet with creosote for two or three days, and bring the patient to the Infirmary, and I will exhibit my method of treatment, which will be to cleanse out all foreign soluble matter by repeated syringing; after which dry with ropes of bibulous paper, and fill the chasm with aromatic sulphuric acid; dress outside over the fistula with a pellet of cotton wet with tannin and glycerin; give supporting treatment, and wash the mouth with a solution of soda frequently.

The following questions were asked and replied to by the doctor:

"Would not the strong solution of chloride of zinc act as well as the aromatic sulphuric acid?"

"No. I would use the chloride of zinc in the inflammatory stage before a fistula is formed, and by general tonics limit the destruction of the cells of bone."

"Would not the extraction of the tooth cure the evil?"

"No. It might perhaps extend the mischief."

"What will be the condition of the tooth when healthy action is restored?"

"There will be a reproduction of tissue, and the end of the roots, the growth of which is not yet thoroughly completed, will be enveloped, first by cartilaginous, and then by bony substance."

"Is this what you call a dead tooth?"

"Not by any means, for the tooth still retains vitality, and is nourished through the investing membrane. No dead tooth will be allowed to remain in the system."

The subject of "The Effect of Diseased Teeth and Gums upon the General Health" was now taken up.

Dr. Scott read a voluntary paper on the subject, claiming that among the numerous ills that human flesh is heir to, one of the principal is an unhealthy condition of the dental organs.

Diseased teeth and gums vitiate the secretions of the mouth. To them is intrusted the important business of comminuting the food,—the fuel of life,—which, when thoroughly mixed with the secretions of the salivary glands, is prepared for the stomach. If not sound, bright and clean, they are unable to discharge their duties satisfactorily, and, moreover, contaminate everything with which they come in contact, the morbid particles given off vitiating those secretions which are absolutely necessary to produce and maintain a healthy tone in the system. They produce neuralgia, dyspepsia, and other derangements, and thus engender constitutional disorders, operating unfavorably on the chymefactive process.

If the teeth are unable to comminute the food thoroughly before deglutition, the various organs in its onward course are unduly taxed, and, as a natural consequence, a reaction will take place and a degree of torpor exist which will materially derange the machinery of life.

Dr. L. E. Brockway followed, indorsing the paper read, and urging that the accumulation of tartar upon the teeth, and the consequent inflammation and recession of the gums, led to many injurious effects upon the health, by the vitiation of the fluids of the mouth, and the admixture with the food of the unhealthy exudations, which, being carried into the stomach, deteriorate the usefulness of that organ, and by its disturbance exert a bad influence upon the general health.

Dr. Hill said that, in the case of children's teeth, as they often present very much decayed,—in many cases abscessed and the gums inflamed,—should we take as much pains to save the roots of the temporary teeth as we do those of adults? I think we should. I never extract a root,

either for a child or an adult when it can be avoided. Several cases come to my mind where they have been kept in a healthy condition for a number of years, and are still decidedly serviceable; one case of a lady in particular, where for eight years several roots have been doing excellent work, and are likely to continue so for some time to come. In this case two of the lower roots lie horizontally upon the gum, with healthy attachment, which is very strong. They do good service in mastication.

Dr. Atkinson. All teeth and parts of teeth should be retained more sedulously with children than adults, because if the temporary teeth are taken out, the gums harden by cicatrical tissue, which retards the advancement of the permanent teeth. My method is to file the roots of the tooth down to the gum, smoothing off all ragged edges, so that they can be kept free from the lodgment of food. Civilization has ignored teeth and brought about their diseases.

Dr. Dolbear. "Do you always retain the roots of teeth instead of extracting them when you are to make cases of artificial teeth?"

Dr. Atkinson. "I always do. If the roots are healthy, so much the better; if not, bring them to a healthy condition. I use them as distributors of force, and for this purpose they are much better than the gums alone."—*Cosmos.*

Pensylvania Association of Dental Surgeons, October 18th, 1870.—"*Free Mercury in Vulcanized Red Rubber.*"—In opening the discussion, Dr. Wildman stated that he had treated the vulcanized red rubber, of different manufacturers, with chemically pure nitric acid, allowing it to stand for several days, then filtering and evaporating, leaving it, however, slightly acidulated. He had then tried the effect of this residue upon polished copper, and had found that the characteristic white spot remained upon the copper, showing the presence of free mercury. This is considered the best test. This test was also made before the Association, and resulted as above. The whalebone rubber also presented the white stain, but not in so marked a degree as the others. He was satisfied, from this test, that there was a minute portion of free mercury in the vulcanized red rubber. He also exhibited several specimens of vulcanized rubber under the microscope, in all of which, upon careful examination, globules of mercury could be seen. He said a little care was required to distinguish the globules of mercury from the crystals of sulphur, always present—the former presenting a bright metallic lustre.

Dr. Buckingham asked, if, after treating the sulphide of mercury with nitric acid, the same result was produced.

Dr. Wildman, in reply, stated that he had treated the sulphide of

mercury, also, with pure nitric acid, and tested it upon the polished copper, but without other effect than the action of the nitric acid upon the copper. No white stain remained.

Dr. Buckingham said, two questions presented themselves, namely, whether the sulphide of mercury used to color the rubber was pure, or contained some free mercury, or whether it was decomposed at the temperature at which the rubber was vulcanized. The books say it is not decomposed at a much less temperature than 600° F. He had no doubt it was decomposed. He doubted if there were sufficient free mercury in it to produce any effect, either local or constitutional. He did not think the free mercury, if present, could get out of the rubber. That on the surface would soon be either dissolved or volatilized. It may be injurious in certain cases, but it was not proven that it is injurious in all. There was no doubt in his mind that the vulcanized rubber contained some free mercury. He thought some rubber contained inferior vermilion. Rubber plates, worn in the mouth, change in a few years, either by time or the action of the saliva, or in some manner not known. They also change when kept on hand for a long time, but not in use. The secretions of the mouth get in between the teeth and the rubber, and the gases formed may act upon the free mercury in the rubber. He believed vulcanite rubber as a base for artificial teeth to be a bad thing in most cases.

Dr. Wildman stated that he had experimented with the Hard Rubber Co.'s rubber, vulcanized at 280° F., and found the same condition to exist, *i. e.*, the slight decomposition of the sulphide of mercury. A specimen of this Company's rubber, vulcanized at 280 °F., was exhibited under the microscope, showing globules of mercury.

Dr. Buckingham spoke of some rubber in the market a few years ago, which, when vulcanized, became black in spots. He supposed it had been colored with red lead.

Dr. Wildman said he had tried coloring rubber with red lead as an experiment, and found it produced a black color when vulcanized.

Dr. Buckingham thought the only real test, as to whether the vulcanite base was injurious or not, was its use in the mouth. He had not seen, in his own practice, any marked case of injurious effects. He thought silver plates were better than rubber, if kept clean. Rubber plates, if not kept clean, become coated, and this coating would be some protection from the action of the mercury. Black rubber might be substituted for the red with advantage, or the rubber and sulphur without any coloring matter whatever. He thought the whalebone rubber had some kind of gum mixed with it, which gave it its elasticity.

Dr. Henry Moore thought all persons could not wear rubber plates.

He mentioned a case of a lady who had worn a gold plate for some years, when she had a rubber plate made. Her mouth soon became sore and she became quite sick. When the rubber plate was left out for a few days she got well: but upon replacing it her mouth became sore again. This was repeated twice, when she returned to gold, and experienced no further evil effects.

Dr. Githens instanced a case of a lady who had worn a gold plate for several years, and then procured a rubber plate. Ever since she had been wearing it she had complained of a stinging sensation in the mouth. The mouth presented a perfectly healthy appearance. He had seen cases of sore mouth from wearing silver plates.

Dr. Wildman thought the trouble arose from the rubber being a non-conductor of heat.

Dr. Buckingham mentioned a case, in his own practice, of a lady who had worn a rubber plate for a year, and during that time, had complained of a burning, stinging sensation in the mouth, but only sufficient to be annoying. The mouth appears healthy.

Dr. Wm. H. Trueman thought the testimony of patients unreliable in regard to the effects of mercury. He related a case where a patient had an amalgam filling inserted, and, some six or eight months after, suffered all the symptoms of salivation, copious flow of saliva, inflamed gums, &c., for several days. Upon making an examination, he found the filling was out, and from the appearance of the cavity it had been out for *some time before the trouble commenced.* On being assured the plug was no longer there, the symptoms entirely subsided, and the patient fully recovered, although several fillings of the same material still remained. The immediate cause of the trouble in this case was the patient's reading an account published in the newspaper of a young lady being poisoned by the presence of several amalgam fillings in her mouth. Recollecting that she had one inserted a few months before, she almost immediately began to notice the evil effects of mercury, and in a short time salivation occurred, from *mercury on the brain!* The swelling and turgidity of the gums was, no doubt, due to the constant "sucking," or continued forced expectoration. He thought it possible the mercury in rubber might sometimes operate in the same way. He was not convinced that there was free mercury in the rubber. He had not been able to find its peculiar characteristics under the microscope. He thought the metallic lustre was due to minute particles of quartz, or to the oxide of zinc used in its manufacture.

Dr. Wildman said nitric acid would not act upon vermilion at all. His experience had been entirely different from Dr. W. H. Trueman's. He

had first noticed the globules of mercury about two years ago, when, in scraping some vulcanized rubber, he observed a bright spot which proved to be a globule of mercury, which he removed with a needle. He had noticed the same since. He had no doubt there was free mercury in the vulcanized red rubber.

Dr. W. H. Trueman said he had tested it with gold foil, and had not succeeded in obtaining any discoloration.

Dr. Githens asked why, if there was free mercury in rubber, gold could be vulcanized in contact with it without change?

Dr. Wildman doubted if the mercury produced any injurious effects.

Dr. Wert thought there was often inflammation of the mucous membrane of the mouth, extending from the throat, and if a plate was worn it might be attributed to that. When a person had been once salivated, he thought he was more susceptible to the influence of mercury.

Dr. Wildman said, in preparing the specimens for the microscope, they must be shaved down, but not polished, as that removed the globules of mercury.—*Dental Times*.

SELECTED ARTICLES.

THE FILE.

By THOS. C. STELLWAGEN, M.D., D.D.S., PROF. OF OPERATIVE DENTISTRY AND DENTAL PATHOLOGY IN PHILADELPHIA DENTAL COLLEGE.

Read before the Odontographic Society of Pennsylvania.

The file is probably the most ancient, and perhaps the most abused instrument for the treatment of dental caries. In the works of Aëtius we first find its use recorded, and this author is supposed to have written about 540 A.D., or, according to others, born about 455 A.D. Both friends and foes have dealt severe blows against its use; the former, by unskilful manipulations, often giving to the latter opportunities to report ailures.

For more than thirteen hundred years it has stood the storm, yet, founded on true principle, it has endured until this time without any signs of waning strength. It now looks so lusty and robust, that it seems to be in its prime of life. The victor over ages and centuries of time, at a moderate estimate, it has overthrown half a hundred of generations of opponents, many of whom have long since crumbled and mouldered into dust, yet its services are more valuable and its temper more perfect than ever before.

Should we hesitate in proclaiming ourselves as advocates of a principle

in practice, that has been criticised only severely in proportion as it has been successful in arresting the progress of disease? There have been times when fanaticism so ruled that proud men dared not favor adverse theories to those prevailing, even in that all important matter of religion itself. Can we wonder that many have lately been deterred from urging the use of the file, lest they should awaken an opposition which, in sorrow we admit, was embittered by unhesitating vituperation. The vexed question no sooner seems settled than we meet new phases, for

> "Truth crushed to earth will rise again;
> The eternal years of God are hers."

In all these ebbs and flows may be traced a reason for the changes; there is in the use of this instrument a happy medium, which is a solution to the dispute. The governing principle has been forgotten, and in the turmoil personalities have been substituted with disastrous results to both sides,—since both lose by going too far.

Do we not operate to save teeth and make them useful? If so, we at once have the fundamental point of the argument in a few propositions,—

I. The exciting cause of caries acts most readily upon those surfaces of teeth that are not kept free from long-continued lodgment of food.

II. All treatment should aim at the permanent removal of this cause, as perfectly as possible, with the least liability to a return of the condition, or actual detriment to the parts.

To the first, believers in the vital, the chemical, the chemico-vital, or the parasitic theories may accord. It is the continued irritation, chemical action, or contact, germination and growth of the spores of the plants, or eggs of the animalculæ, that are admitted as the exciting causes. The first two must have time to act, the latter to germinate and grow. To the second proposition some may demur, yet it is no less plain than the first; it simply means "remove the cause and the progress of the disease will be arrested." If the latter could be accomplished, and the lost parts restored with healthy dentine and enamel, the result would be the perfection of dentistry. In our present state of knowledge this seems impossible. The union of a wound of the soft parts is not all that is required by this proposition, and to attempt this with a tooth is hopeless. When the death of a part of the highly vital tissues has been extensive, all that can be expected is the repair by cicatricial tissue, which is far inferior to the original before it become diseased, inasmuch as it has less vitality, less strength, and is liable to break down from very slight causes.

A moment's consideration will shew that the cause can only be removed by strict attention to cleanliness; and it needs not to be proved that if

the same shape which favored the lodgment of the food is allowed to continue, it is seldom that any other than similar results will follow.

For the sake of argument, suppose it possible—first, to so mould or alter the shape of the tooth so as to have the surface self-cleansing; would it not be the best? Second, if the contour of the tooth is strictly reproduced in gold, do we not have the greatest possibility of the recurrence of disease, unless the whole surface upon which the cause acts be rendered imperishable, or is plated with some indestructible material? Third, the system, the fluids of the mouth, or the food retained between the teeth, may be so altered that the exciting cause is suppressed.

The first of the above, in our present state of information, involves principles not yet understood, to say the least of it. The second is possible where the cavity is such as to require a filling that will cover the whole surface. The third we may do much with by means of antacids and systematic treatment; but it requires that the patients should be able to reach these localities themselves.

Let us consider without prejudice what the result will be if the teeth are so altered by a removal of tissue that will accomplish most readily the moulding of them to a proper shape to cleanse the surfaces by the natural acts of mastication. Then if the parts could be reinvested with enamel, but few would object to the operation. But is this covering of enamel always essential? No! When incisor teeth are slightly broken on their cutting edges, yet not enough to interfere with their use, or their pulps, is there any one who would deem it necessary to do more than smooth and polish off the roughness? Many can cite instances where this condition has been satisfactorily obtained. Again, there are, in the mouths of nearly all who have attained advanced age, teeth that from attrition have had their dentine exposed; but it is so smooth and free from all accumulations as to be perfectly healthy.

The teeth of lower animals show examples where enamel, dentine, and cementum are uncovered when in a normal condition. This will be found to be the case in the rodents and many of the herbivora. The marks on the teeth by which the jockey judges of the age of a horse, all dentists know, are due to the dipping down of the three substances on the cutting edges and the gradual wearing away of the walls of the pits.

If this does not prove the fact that enamel is not essential for preservation from caries, an examination of cases where filling has been properly practised will; and it is with these we may deal with more certainty than the finest drawn theories.

The principle is one of the most reliable of the modern school of dentistry, and there are thousands of cases where filed teeth have resisted

disease longer than those (in the same mouth) covered by enamel. When we compare the properly filed tooth with one that has been properly filled, the difference in favor of the former is still greater.—*Cosmos.*

TREATMENT OF EXPOSED PULPS.

BY I. KNAPP, D.D.S.

Read before the Indiana State Dental Association, June 28, 1870.

With my present views the topic given me would require but a few short sentences for its discussion. I hope, therefore, in the brief paper I present to you to-day I may be pardoned a hasty glance at the past, and for introducing some matter which may not be considered entirely germane to the subject.

If I succeed in awaking a deeper interest in our profession, or in suggesting an inquiry in any mind, which may lead to better results, to a wider sphere, and a clearer conception of dental science than have been obtained I shall be fully satisfied.

The treatment of exposed pulps has been for many years the gravest problem of dental surgery. Previous to the advent of modern dentistry the idea of saving the pulp seems not to have been entertained; but the Dentist feeling the reproach of being compelled to apply the forceps to every aching tooth, which he claimed it was his mission to preserve, began to enquire seriously for a better way. Ever watchful of facts, ever observant of the operations of natural laws, he often found the breach which the destructive agents had wrought in the solid walls which surround this most delicate and sensitive organ, had been repaired by an inner wall, built up behind a protecting mass of decayed dentine.

Obeying the dictates of the great teacher, nature, he reasoned: "If I can allay all irritation and hermetically shut out all external influences, this sensitive little organ will be quite comfortable; or if not entirely satisfied with its new relations it will be only sufficiently alarmed to prompt it to gather new material, and speedily repair the breach in its protecting walls." Prompt to act upon his conclusions, with his creasote and morphine, and many other agents, he combated, and generally successfully, both pain and irritation. Then he prepared his cap, his shield of protection; first of precious and then of base metals; and of bone, horn, quill, and rubber. Upon one and another of these materials he built up a secure and beautiful filling; and felt that he had done a good thing. Nay, so secure were the evidences of success that he often cried out in exultation, Eureka! Eureka! But alas, how soon despair triumphed over exultation, and reigned supreme!

He had not shut out that, to the pulp, most destructive of all agents, great and sudden alternations of temperatures. His cap did not fit, nor mould itself to the recess. It sometimes pressed upon it, but often left an intervening space, into which the pulp swelled, or sent a morbid growth, and fretted itself against the rough edges of the aperture.

Then followed just a little tenderness, a little soreness, a slight elongation of the tooth, and then increased arterial action, pain, distended capillaries, infiltration, heat, tumefaction, agony, death; a pus secreting sac and an abscess.

> "It will but skim and film the ulcerous place,
> While rank corruption marring all within
> Infects unseen."

Abandoning a practice, based, undoubtedly, upon a true theory:

> "That 'kept' the word of promise to our ear
> But 'broke' it to our hope."

With unabated determination to succeed the Dentist sought for other ways to save teeth with exposed pulps. Often finding the pulp dead he removed it, cleansed the canals and filled them and the decayed cavity Watching these teeth for years, he found they retained a feeble vitality but sufficient to retain them in their sockets, answering all the purposes of sound teeth.

If a tooth, with a dead pulp, can be saved and made useful (while one with a live, exposed pulp can not) then why not put the tooth in a condition to be saved? Why not kill to make alive?

The true Dentist is ever a conservative in theory, for he seeks to preserve to retain, and save. But to save more effectually, he is and must ever be progressive in practice. Often led by an *ignis fatuus* he is ready to follow any light which seems to float over solid ground.

Hence for long years the fatal arsenic has done its deadly work. Tens of thousands of living, throbbing pulps have succumbed to this powerful poison; but

> "Death came quick and pangless."

And tens of thousands of teeth that would have been doomed to the forceps are now performing all the functions of sound organs. A practice which in skillful, experienced hands, saved, for a term of years, so large a per centage of teeth with exposed pulps, can not be condemned, for no better was known; but the process is laborious, taxing the utmost energy and skill of the operator, and laying a heavy burden upon the time and purse of the patient.

Thus, gentlemen, in general terms, I have given you my experience in

the treatment of exposed pulps; and I presume it is essentially the experience of every Dentist who had been in practice fifteen or twenty years.

Your committee ask, "What are the indications for destroying the pulp?"

Had the question been asked less than a brief year ago I should have answered, unhesitatingly, the simple fact of its exposure, if you wish to save the tooth.

But I rejoice to quote one most eminent among us that "we have received new illuminations." Our course is onward, and must be until we reach a perfected science, which is law.

Ox. chl. zinc, for many years a comparatively useless article upon the Dentist's case, has suddenly become a life-preserver, a true artificial bone. Time must test this new practice, as it has others which have preceded it. Its present fair promise may end in disappointment. I have seen no infallible evidence of its success. I have not as yet removed any filling to see if new dentine had formed over the pulps, or whether the pulp itself was alive. I have only the negative evidence of perfect freedom from any abnormal symptoms.

Assuming, therefore, pulps can be successfully treated with ox. chl. zinc, I shall state, negatively, the conditions under which they should not be destroyed:

1st. Any accidental slight exposure.

2d. Any small exposure, which has given notice of its presence by slight pain; only *on contact* with irritating substances.

3d. Large exposures which have been so protected with thick layers of decayed dentine that the pulp has escaped all irritation.

Nearly all these cases may be prepared; touched with some escharotic, oxychloride of zinc., applied and filled, permanently, at once.

4th. All cases where the pulp, dentine, and investing membranes are in pathological condition when the normal conditions can be permanently restored by treatment.

Of the four classes named I have filled twenty-six teeth of which I have some record. I have filled, perhaps, ten or twelve more of which I have none. One of the twenty-six coming under the head of the fourth class, I filled against my judgment, as the patient would submit to no treatment. The tooth was removed the second day after filling. Six or eight of the whole number are still on trial, filled only with ox. chl. zinc; but they are all apparently doing well.

In answering affirmatively the question of your committee "What are the indications for destroying the pulp?" I am happy to say they are few.

1st. When you are satisfied that inflammation has reached that stage

when the membranes and pulp begin to soften and break down (unless you wish to save a part of the organ alive) you will save yourself trouble, and your patient much suffering by the prompt use of arsenic.

This difficulty will be met, I apprehend, in the cachectic and strumous diathesis, and in persons of low vitality and feeble nutrition, especially if they be pregnant and nursing women.

The demands of the child during utero-gestation and nursing upon the mother are often greater than her feeble powers can supply. But it seems to be a law of nature that the new shall grow at the expense of the old; that the decaying vitality of the one shall support the growing organ of the other. The mother becomes pale, thin in flesh, and feeble; the child grows strong and healthy. Especially do the teeth of the mother suffer from want of nutrition, and may it not be a question whether they are not deprived of existing bone material by the great demands of the fœtus? May we not find in this want of nutrition an explanation of that painful train of pathological conditions from which pregnant women often suffer so intensely, rather than in that high sounding but meaningless expression, sympathy? What bond of sympathy can there be between organs so far removed and so different in anatomical structure, and in function?

May we not, therefore, class pregnant and nursing women of low vitality in the strumous and cachectic diathesis? With these classes of persons the chances of controlling, successfully, irritation and inflammation of the pulps and membranes are not flattering, and it would probably be good practice not to fill the cavity permanently until the lapse of considerable time.

It may be questioned whether the oxychloride of zinc has any therapeutical agency in saving pulps, if the case had been properly prepared for its application. But if the dentine is still sensitive, and the pulp not perfectly protected by coagulum, its escharotic effects will be promptly felt, and it may be relied upon, to a certain extent, to complete what should have been previously accomplished by other agents.

Ox. chl. zinc is a perfect non-conductor. It does "hermetically shut out" or protect the pulp from sudden alternations of temperature. This, by any other mode of capping, was not accomplished. Applied in a semi-fluid, creamy condition, it moulds and adapts itself perfectly to the soft tissues, without the least pressure, and completely fills the cavity; thus preventing any swelling of the pulp or morbid, spongy growth through the aperture, and also preventing any irritation of the membranes by pressure against its rough border. It is said to be an absorbent, but being an escharotic the porosity of its surface would be so promptly filled with

coagulum, from first contact of lymph, that it may be questioned whether it can be relied upon for that purpose.

This agent does not appear to possess any mysterious potency; any occult, therapeutical power over exposed pulps. There is no conflict of contending forces; no triumph of a presiding ghost over opposing enemies. With innoxious, congenial substances you inclose and confine a healthy pulp within its cavity, interposing a soft elastic cushion of coagulum, and your work is done. A fractured bone, held in position by splint and bandage, re-unites the dissevered ends by its own inherent power. So the pulp and investing membranes securely protected from irritation, close up the aperture in the wall of their cells by their own inherent power of reproduction. I dwell upon this point because I wish to assign to this invaluable agent its own work; that you may not seek to accomplish by its agency what can only be done successfully by other means.

The gravest problem of Dental Surgery, successful treatment of exposed pulps, seems to be solved. But let no one imagine that the difficulties have been all removed. It will still often tax the skill of the most experienced, and the manipulation of the most careful to their utmost, to control the pathological conditions of the pulp and surrounding organs.

In closing then, I congratulate you, gentlemen, that you can now so promptly allay the pain and inflammation of this sensitive organ, when exposed to influences which would cause its speedy death, and can surround it with conditions so favorable to the free exercise of its normal functions that it can speedily repair all damages, and again beat against the walls of its repaired chamber, in harmonious response to the healthy pulsations of the whole system.—*Register.*

HEAVY MALLETS.

BY G. H. CUSHING, D.D.S., CHICAGO.

What we require in a mallet is that it shall impact the gold properly, with the least possible injury to the tooth, and the parts surrounding it, and the least discomfort to the patient.

The theory of Prof. Watt, and probably of many others who never used the heavy mallets is, that a light, elastic mallet is better than a heavy, non-elastic one, for the reason that the momentum of a light elastic mallet, equalling the momentum of a heavy leaden one, being secured by greater velocity, imparts its force so quickly that there is no time for its distribution to any extent beyond the tooth itself. Now if the force were not diffused beyond the tooth at all, or were we operating upon mere

inanimate matter, this theory would be all very well. But we are operating upon living sensitive tissue, with all the physiological conditions qualifying it, and with the light mallet the force is diffused beyond the tooth, and that only enough to occasion sometimes great soreness of the periosteum, and to render the operation consequently very painful. Now the heavy leaden mallet, moving at much less velocity for the same momentum, has its force diffused very much more, so that in a certain sense, the jaw and the head divide the force of the blow with the tooth and its immediate surroundings.

Experience demonstrates that as a rule the heavy leaden mallet is by far the least disagreeable one to the patient, while impacting the gold equally as well as the light elastic mallet, and my theory is, that it is for this very reason, because the force in that case is more diffused than when the light elastic mallet is used, and I think this is clearly reasonable, in view of what has been stated above.

But it does not appear why there should be so very great a difference. There seems to be something in the character of the blow dependant upon the material used, which has a modifying influence.

Mallets of almost every description have been used. Lead, steel, copper, wood, ivory, hard rubber, and rubber or wood, faced mallets, with springs to break the force of the blow. You will find advocates for each and all these various kinds, but I feel very confident that when the matter has been fairly tested, the conclusion will be universally reached that an uncovered leaden mallet, weighing from six to eight ounces, will be preferred by nine-tenths of those upon whom they are used, and that the gold is equally as well and satisfactorily condensed.

I have personally tried faithfully the light wooden, the light leaden, the light hard rubber, the steel and the heavy leaden mallet; trying them all in the same mouth, and comparing them daily for several months, and have come to the conclusion stated above, that the heavy leaden mallet is universally preferred, except in very rare cases.

While attending the Mississippi Valley Dental Association held early in March of this year, Prof. Watt detailed experiments which he had been making to demonstrate the action of different materials, and of different weights of the same materials as mallets, that is as to their relative "*vis viva*," or the amount of work which they would relativel accomplish in the way of impact before coming to a state of rest. The experiments which I afterwards instituted myself were suggested by those of Prof. Watt, and as I thought his apparatus not so constructed as to be uniformly accurate in its operation, I had mine made with a view to the greatest possible accuracy; and the result of my experiments satisfied me

that the apparatus was all that could be desired for the purpose. It consisted of an upright board 18 inches high by 3 feet wide, set in a base of wood 8 inches wide, thus making a platform at the base of the board, in front 3 inches wide. From in front of this board at its central point, was suspended by means of an arbor running accurately in close fitting journals, a pendulum of steel wire, which could be lengthened or shortened at pleasure, and to which mallets could be attached, of any size or material. Upon the platform at the base of the board, running in grooves of brass, its base resting on the platform of wood, was a brass box—weighted inside with lead—about 5 inches long by 2 inches high and $1\frac{1}{2}$ inch wide, weighing altogether about three or four pounds; and upon the top of this brass box a steel bar was accurately fitted, to move lengthwise upon the box in nicely adjusted bearings; a set screw with a spring adjusted the tension of the bar at will. Opposite the bar and also the brass box, were fixed graduating scales of 24ths of an inch. These being set at zero, and so that the end of the bar should just touch the end of the mallet when it was hanging at rest, the mallet was drawn to a certain point and dropped, striking the end of the bar at greatest momentum. The results of the blow were then evident of course; upon reading upon the graduating scales the distance passed over by both the bar and brass box, and thus was seen the relative effect of the blow upon the bar and the whole mass.

In this way, by comparing the results of blows produced by different mallets, was seen the difference in the diffusion of force due to the difference in the character of the material composing the mallet, as well as the difference of the "*vis viva*."

The experiments were limited for want of time, and not of sufficient varied a character to demonstrate all that we seek to know, but they were somewhat astonishing in some respects, and I think contrary to the generally accepted theories concerning impact. I will briefly detail the experiments, which were conclusive as far as they went. They were each repeated eight times or more with most *remarkably accurate* coincidence of results. But one blow of the mallet was struck in each experiment.

The spaces on the graduated scales will be designated as degrees.

Lead mallet..... { drove the steel bar 4 degrees, whole mass .5 degress.

Lignum Vitæ, same weight..... { steel bar 5 degrees; whole mass .1 degree.

Lignum Vitæ, with lead ends, same weight..... { steel bar 4 .5 degrees; whole mass .1 degree.

Soft iron, same weight..... { steel bar 5 degrees; whole mass 4. degrees.

Soft pure rubber, same weight..... { steel bar 4 .5 degrees; whole mass .4 degrees.

The diffusion of force is apparent upon comparison of the distances passed over by the whole mass, and the steel bar moving upon the mass, the greater diffusion of course being where the whole mass was moved the greater distance relatively to the distance passed over by the bar in the same experiment. Thus it will be observed that in the first four experiments the lead seemed to exhibit the greatest diffusion and the lignum vitæ the least, while the soft iron would seem to have the greatest amount of "*vis viva*." In these four experiments, then, it would seem to be fair to presume that the difference in the diffusion of force here evinced, was due to the difference in elasticity of material used as mallets; the more elastic showing less diffusion; but when we examine the record of the experiment of the soft rubber, we find that the diffusion of force in this experiment seems to be equal, if not greater, than in the case of the lead mallet, and its "*vis viva*" to bear the same relation to the lead that its diffusion does. This certainly seems strange, and I do not propose to account for these phenomena at present. I only give these experiments as being curious and interesting, and showing the importance of experimental research in such investigations, and also in the hope that what has been said upon the subject may stimulate others to investigate it. The length of this paper, so much beyond what I had intended it to be, I should deem required some apology, if I did not feel that although for practical purposes this physiological demonstration is not needed, yet it ill becomes a body claiming to be scientific, to rest short of a thorough philosophical and scientific investigation of all processes it may have occasion to use. In conclusion, I would state that the experiment with pure rubber surprised me greatly, but naturally suggested the enquiry in my mind, "if the action of the rubber in driving this bar so nearly approximates in results to the more solid, both in elastic and non-elastic materials, why may it not be used to pack the gold as other mallets are? I made the experiment with it, having, however, little confidence that it would operate successfully for the purpose and was much astonished to find, that apparently it effected the purpose equally as well as the other mallets, and in the case in which I used it, with much less suffering and annoyance to the patient. I only tried it in two cases, and I cannot of course say whether it would generally be preferred, but I think it not improbable that it may prove valuable in certain cases of very lengthy operations, where the teeth are extremely sensitive to malleting with any material.—*American Journal of Dental Science.*

VOMITING SAID TO HAVE BEEN PRODUCED BY THE INHALATION OF NITROUS OXIDE GAS.

BY J. L. RITSON, L.D.S.

Some few weeks ago a young lady, about 17 years of age, presented herself to me to have an inferior molar, right side, extracted. She wished to be placed under the influence of the nitrous oxide gas for the operation. I asked her several questions to satisfy myself as to the propriety of administering the anæsthetic, and amongst other things wished to know how long it was since she had partaken of food. I found, about two hours previous to my seeing her (it being then about 3 p. m.), she had taken a very small quantity of food at the usual dinner hour; she was suffering so much from the diseased tooth that she had but little inclination to eat. I therefore proceeded to administer the gas, and all went on as satisfactorily as possible, the patient being perfectly anæsthetised in about fifty seconds. I removed the face piece, and immediately after I had done so vomiting commenced freely. Being anxious to have the offending tooth out whilst the patient was in a state of unconsciousness of pain, I proceeded to operate, although under most disadvantageous circumstances, owing to the contents of the stomach coming up so freely. I succeeded in getting out the tooth at once, and the patient was quite unconscious of any pain during the operation. She awoke in about a minute after the tooth was removed, the vomiting going on for about another minute or two after she was restored to consciousness. Some little time was then spent by the servant who accompanied her, in cleaning the dress, &c., which had become unavoidably soiled by the sickness, when the patient walked home apparently none the worse from what had taken place.

On Monday last (31st October) a young lady brought her brother to have a tooth extracted, and after the operation she asked me if I remembered a young person having the gas some short time back, and being very sick from the effects thereof; I replied I did perfectly. She said that the same young lady had been very ill for three weeks after the inhalation, and that her medical attendant attributed her illness entirely to the influence of the gas. I endeavoured to get some particulars as to the nature of her illness, and the symptoms connected therewith, but could learn nothing from the young lady I interrogated, as she knew nothing as to the nature of the case.

The patient here alluded to was the daughter of a sea captain, and had returned to England from Australia about a month previous to the ope-

ration. She was well nourished, and appeared a healthy young person. I may remark that the gas used in this case was the liquid nitrous oxide manufactured by Messrs. Coxeter & Son, Clover's face-piece and all the other necessary appliances being attached to the vessel containing the gas.

Henley villa, Dulwich Road, Penge, S. E.

[We publish this as a typical case, although presenting no very new aspects, and chiefly to enable us to append the following remarks upon it with which we have been favoured by J. T. Clover, Esq., F.R.C.S., whose experience in these matters is so well known. We have had a somewhat similar case, the sister of a medical man, who began to vomit after inhaling for about thirty seconds; but upon inquiry we learnt that she habitually vomited on the occurrence of any unusual excitement or anxiety.—Ed. 'B. J. D. S.']

The report of the case is incomplete without particulars of the illness, which the medical man in attendance alone could give.

The fact of vomiting commencing within a minute of inhaling nitrous oxide is so contrary to experience that it is impossible to regard the inhalation simply as the cause of the sickness.

She had eaten a very *small* quantity of food at dinner, yet the vomiting was *very considerable*, so that it is probable that the stomach was not so empty as it ought to be when she commenced dinner, and that toothache was really only a part of the illness under which she was labouring when she went to the dentist.

We are not informed whether she vomited blood. When blood is swallowed it often acts like an emetic, and the loss of blood when the system is weakened by pain and loss of rest might account for an illness of three weeks.—*British Journal of Dental Science.*

PATENT RIGHTS.

BY S. J. M'DOUGALL, M.D., BOSTON, MASS.

Read before the Massachusetts Dental Society.

All that seems necessary in order to obtain letters-patent is to present to the commissioner an idea, or the embodiment of an idea, that shall, after a moderate amount of record-searching, appear to him new. And all that is necessary to sustain it is to show that it has never been made public or put into general use: rather, the opponents must show that it has been made public or become common, available property previous to or coeval with the patentee's knowledge of or experiments with the same, in order to induce the courts of law to declare it null and void.

I believe in the doctrine that "the laborer is worthy of his hire," and that no kind of labor is more entitled to its reward than the invention and introduction of a useful instrument or machine, or the conception and promulgation of an original and valuable idea. Neither has a man any better right by law, either civil or moral, to goods, chattels, bonds or

mortgages, or other kinds of property, than he has to letters-patent, or their pecuniary representative, when fairly and honorably obtained, he having solved and utilized or bought the original problem. For his discovery or invention the law rewards him, and his fellow men should honor him.

But that letters-patent should command our respect, they should carry with them at least the shadow of originality, or of having been honestly obtained, and possesses some practical value. Yet it is very evident that many of those issued have not even the *shade* of such a shadow, and many more are utterly and totally worthless,—not worth the paper on which they are written. Nevertheless, they are brought to us and urged upon us as a "big thing,"—something with which we can make a fortune in ten days, more or less; so we buy, and in buying get terribly sold. Again, some old idea or method that has been used for years, though not extensively published to the world, is taken up by some enterprising dentist, claimed as original, and letters patent secured; when we are politely informed that we must pay up or discontinue the use thereof.

To satisfy ourselves on this point we have only to call to mind many of the patents issued within the past few years relating to the dental profession, coupled with the action of the patentees.

The latest of the kind that has come to my notice is "Straight's Patent Flexible Edge," for increasing the atmospheric pressure on vulcanite plates. It consists in running a band of soft rubber around the edge of the hard-rubber base, and is advertised as a "valuable discovery in dental science."

The idea of a "flexible edge" is not new. Neither is the practical adaptation thereof new. The set of teeth with a flexible edge which I present for your inspection was made for and worn by a lady (a patient of mine) of this city in June, 1866. Since that time myself and others have made a goodly number of the same kind.

Not being ambitious for fame as a "contributor," nor avaracious enough to secure a patent, nor yet sufficiently impressed with the magnitude of "my discovery," it was not so extensively advertised as to come to the notice of the Commissioner of Patents. Still, to a certain extent it has been advertised.

Two years ago this fall and winter, I had the honor of delivering a course of lectures to the students in the Boston Dental College, on "Dental Art and Mechanism." I then and there made known to them this "valuable discovery," with a full description of the manner of applying it, on at least two separate occasions. My written notes confirm my memory in regard to the matter. The question will now arise, if these

are facts, is the patent valid? That of course will be for the courts of law to decide; and no doubt the decision would turn on the question whether describing the process or method covered by the patent a year or more previous to its issue, in a public lecture, would sufficiently advertise it to make it public property?

Before buying this or any other patent-right, it would he well for dentists to satisfy themselves in regard to two things. First, is the patent or "new discovery" of any practical value? and, second, if so, has the owner any moral or *legal* right to the exclusive use or benefit thereof?

Should every member of the profession "look before they leap" into the patent-trap, that intolerable nuisunce the "patent-vender" would soon find other business.—*Cosmos*.

BIBLIOGRAPHICAL NOTICE.

PHYSIOLOGICAL ACTION OF NITROUS OXIDE. BY R. AMONG, M.D. LONGWOOD, BROOKLIN, MASS.—A copy of this pamphlet has been sent to us by the publisher. The writer gives an account of a large number of experiments with nitrous oxide on different animals, as well as on the human system, from which he concludes that death is caused by asphyxia, and not, as has been supposed, by paralysis of the central organs of circulation, nor to an excess of carbonic acid in the blood, as he found that the quantity expired during anæsthesia was only about two-thirds of that which passes from the lungs during natural respiration, but to an imperfect oxygenation of the blood, causing a partial inaction of the capillary system.

EDITORIAL.

A BAD HABIT.

Allowing your Journal to run on from month to month, without having paid your subscription.

It can make no difference to subscribers whether they pay now or a year hence; but it does to the editor, who has to meet all expenses out of his own pocket, unless subscribers are prompt in remitting. We hope this will be "the last time of asking."

B.

THE "PYROXYLINE" BASE.

We promised Mr. Troutman to publish gratuitously that he is sole agent for the sale of the above base in Canada. His address is Box 393, Toronto. We understand he will not supply the base to any one who does not pay him for the instructions we printed in the January number of the Journal. Now, if Mr. T. wants to kill his monopoly, and the sale of the material he had better continue his present system. The Pyroxyline Base will not come into general use in Canada while it is environed with such restrictions. If there is anything good in it—and that remains to be proved—it should be free to all who can afford to buy the material. It will pay to sell to all who care to buy.

We may add, that we intend publishing instructions for every dental monopoly and patent we can get hold of, for the benefit of our readers. Tho principal of Secresy in Dentistry is an embalmed mummy.

LATE.

Our apology for being late with this number as well as the last, is that we undertook to make a trip to New York, Philadelphia, Boston, &c., and partly owing to temporary injuries and detention by a railroad accident, and pressing business of a private nature, we had to miss Boston altogether, and many kind friends in New York and Philadelphia, and hasten our return for reasons which cannot be here well explained.

We were surprised and pleased to find the favourable opinion entertained of this journal by the leading practitioners we met, and the confidence reposed in it by our advertisers.

MARRIED.

At Zanesville, Ohio, on the 26th of January, M. M. Johnston, of the firm of M. M. Johnston & Co., New York, to M. Elle Wheeler, niece of Mr. T. J. L. Blandy.

MISCELLANEOUS.

There are still conservative barbers extant who cling to the early practices of their craft. Passing along Ridge Street, New York City, last month, we observed the following notice on a tin plate in the window of a barber shop.

"*Tooth drawing*, Bleeding, Cupping, Leeching, &c."

A cheap Retort for nitrous oxide is proposed by a writer in the "British Journal of Dental Science."

When first we commenced to make gas we used the large glass flasks sent with the apparatus, costing about three shillings a-piece. A box-full of broken glass testified to the perseverance and constant mortification under this refiner, all kinds of flasks and retorts, stoppered and plain, were tried, but all proved fragile. Now we use a common stone ware gallon beer bottle, price fourpence; put in the nitrate and when thoroughly warmed and hot, by raising the gas slowly we find a cheap substitute.

A single thickness of sheet lead is superior to rubber, as a packing for vulcanizers.

In inordinate secretions from the mucous membrane, &c., during operations in the mouth, it will be found of considerable use to rinse the mouth with a solution of tannin, preparatory to beginning work.

The following has been recommended again to us by a *confrere*, to destroy sensibility and to prevent the pain of extracting teeth. If we are not mistaken it was proposed many years ago by a Dr. Tefft, who said he was offered $1500 for the formula to be patented.

Tinct aconite, chloroform. alcohol a a 1 ounce, morphia, 6 grains mix.

Moisten two pledgets of cotton with this preparation and apply to the gums for a minute or two over the tooth to be extracted.

A great convenience to keep the corundum wheels wet at the lathe, is simply to cut a round or oval hole in one side of a lobster can, crockery pot or anything similar, place the sponge in so as to fill up the hole and then fill with water as full as it will hold. The hole must be cut at proper height, and the sponge allowed to protrude. It is one of those "little things" not known, or thought of by every one.

THE CANADA

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ORIGINAL COMMUNICATIONS.

NOTES ON OPERATIVE DENTISTRY.

BY F. G. CALLENDER, L.D.S., TORONTO,

In fulfilment of my promise to contribute an article to the journal upon some practical subject in Operative Dentistry, I must premise that I am not attempting to advance anything new, but simply to describe my mode of procedure in some of the cases which are daily presented to me for treatment.

There are many points of interest to the young practitioner in operative dentistry, which I would prefer to demonstrate rather than at empt to describe. In the one which I now purpose discussing, my practice will doubtless be viewed by many as questionable, by some, possibly, as extreme and impracticable. By many of our leading practitioners the preservation of the natural teeth is made a specialty, which implies a conscious responsibility. Now, to what extent may this "specialty" be carried? When should a tooth be drawn? Can we in justice gratify the whim of every one who comes in with an aching tooth to have it extracted? Have we a right to do a permanent injury to a patient in order to relieve temporary suffering? I answer, no. The teeth which ought to be extracted or drawn can be only those which may be removed without sacrifice to the possessor, such as necrosed teeth, for instance, teeth that have become a source of irritation from elongation, having lost their antagonists, or from receding of the gum and alveolus, and roots that are of no value. I know it is the custom with many dentists to remove all roots, but how often do we find roots that have antagonising teeth, which are of more value than any artificial ones can possibly be, and which are in no way injurious to the remaining teeth, which a plate always is to some extent, besides the necessary injury and loss by their removal, from the absorption of the alveolus and receding of the gum, denuding the necks of the teeth.

In illustration of this I may state that, soon after the introduction of the os artificial, as a material for filling teeth, I was called upon to remove some roots of teeth of which scarcely anything remained but cementum, and from some of which abscess had formed. To avoid as much as possible the danger of breaking, on account of their extra frailty, I cleansed and filled the root with the os artificial and dismissed my patient with instructions to call again, allowing sufficient time for the filling to harden, that their removal might be accomplished without fracture. On their return in a few days, to my surprise I found the discharge from the abscess had ceased, the periosteum assuming a healthy condition, and the supposed worthless roots of great value for mastication. I have used the os artificial extensively since then, in similar cases, with uniform results. This, to me at least, accidental discovery, through efforts to avoid unnecessary suffering, has enabled me to save for years of usefulness, many roots and shells of teeth, long since condemned, for which I have received remunerative fees and the warmest expressions of thankfulness. Taking these facts into consideration, then, are we justified in deforming (for I can call it by no other name) the human countenance by the wholesale removal of teeth and roots, simply for the convenience of the mechanical dentist, who, at the best, can but partially supply the loss? I think not.

I have now, for some years, been using the os artificial, in my efforts to preserve frail shells of teeth, and teeth with exposed pulps, and devitalized pulps. For this purpose, as well as for fang fillings, I consider it the best material now in use, and when fully hardened and protected with gold, it affords the best support that has yet been obtained.

(*To be continued.*)

EXTRACTING TEETH.

BY G. V. N. RELYEA, L. D. S., BELLEVILLE.

It has often occurred to me that it would be amusing, at least, if not profitable, were practitioners of long standing to give their experience of extracting teeth. I do not mean the manner of doing it scientifically and successfully, but the scene and doing of patients and operations.

For the present I will relate a very few out of the thousand and one that I might give.

1. An Irishwoman came in to have a tooth extracted. She took the chair crying and exclaiming, "Oh, dear doctor, you will murther me!" I quieted her fears and in an instant her tooth was out. She bounded from the chair and asked, "Is it out?" I exhibited the offender to her, till in the grasp of the forceps, when she raised her hands and eyes to

Heaven, and with the most beaming expression of countenance, exclaimed, "God grant there may be a place in Heaven for you!"

2. A pale, emaciated female came in with the toothache. To say she was all nerve is too tame, she was a perfect battery. What a time we had of it! We spent the afternoon over her tooth, indeed until it was too late to operate. She finally concluded to bear it until morning. I advised her to do so, glad to see her go. Morning came, and so did my patient. I own I was mad at the sight of her, but soon made up my mind to have the tooth out or dispatch her—I mean out of the office. I laid out the lancet and forceps, she opened her mouth. I looked at the tooth. She had allowed me the same privilege fifty or a thousand times the day before. She thought herself safe, of course, while she had her hands at liberty and could close her jaw. It was the first upper superior molar to be extracted. I found no teeth in the lower jaw on either side back of the eye tooth. Deliberating for a moment I quietly and gently, but firmly, closed in upon her, with my left hand in her mouth, and then reached for my instruments. She suspected my intention and attempted to force me off, but too late, the noose was on, "darkey had to swing." I brought tooth, but paid for it. She kicked over my show case and sent the specimens in every direction, paid me a quarter of a dollar, and despatched herself.

3. A baroness came in to have her tooth extracted, was accompanied by her Lord the Baron. It was about one o'clock p.m. when my patient took the chair, and I took my position, forceps in hand, when the questions so familar to any dentist commenced. What instruments to use? Let me see it. Will it hurt much? How long will it be in coming out? Won't the instrument slip off? Won't it break the tooth? Won't the tooth crush in? Are you sure you can get it out the first time? Won't you injure the jaw? &c., &c., for at least one hour. I lost patients and patience, and finally told her that I would charge for time. This made no difference. Her husband took his turn at coaxing, and finally at swearing; he was a dreadfully profane man. I never allowed profanity in my office, but then he was a Baron. At four o'clock she came to the conclusion to go home and send for me in the morning. She put on her bonnet and the Baron stepped up and inquired the fee. Five dollars. The stamps came down, my patient left. I have never seen her since, nor do I ever expect to again.

4. A great, coarse, burly Englishman took the chair. I took hold of the right upper superior molar, and at the first move he seized my hand with both his and he bellowed "let go." I replied, "you let go." He would not, and I could not. It was his deathly grip that locked

my hand and locked the forceps on the tooth. He next tried what virtue there was in nails. This enraged me. I made another tug, he relaxed to strike me. I improved the moment and his tooth was out. He bled and so did I. His contrition and apologies, and taking his pocket-handkerchief out and wiping the blood from my hand, made all right.

A student from the Commercial College came to my residence on Sabbath last. His face was much swollen. He took the chair and directed my attention to a lateral incisor. The history of the tooth I will give at some future time, suffice it for the present to say I extracted the tooth, and a copious flow of pus followed. I put the tooth in a glass of warm water and commenced to syringe out the socket, which I continued to do occasionally for an hour. In the meantime I washed and scraped the tooth thoroughly, and then returned it to the socket, held it up a short time and dismissed my patient. Two days after I met him in the street with a cigar in his mouth. I enquired about the tooth, he replied all right, except a little tender. I will report this case more fully if it does well.

THE RUBBER DAM.

By G. C. Daboll, M D.S., Buffalo.

It is hardly necessary to state here, what must have become an axiom with every intelligent dentist, who has had much experience with gold, that absolute freedom from moisture is essential to the perfect working of gold foil. Yet there are many operators who merely make a filling that has not been exposed to a greater or less degree to the effect of moisture. All know and have felt the nervous effect on the operator of being constantly on the guard against the mucous secretions or saliva, and where these have been effectually foiled to find the gold losing its adhesive and welding qualities, from the influence of a humid breath which not unfrequently carries dampness enough to spoil the working of the best gold. In many mouths it has been simply impossible to make reliable operations in gold on the lower jaw on account of these obstacles, and such cases occur sooner or later in every dentist's practice. Taking it for granted that the rule of every dentist should be to aspire to the highest standard in his operations, it becomes a duty he owes to his patients, to avail himself of every appliance, and fixture that will assist in neutralizing this one great bar to perfect success in manufacturing gold.

In the Rubber Dam we have the "*ne plus ultra*" of all appliances for protecting operations against moisture, at once forming a complete guard against all the secretions of the mouth.

As with most new appliances, and perhaps a little more than usual with this, there will be some difficulty at first in managing it, but it needs only persistence and some small degree of ingenuity to soon overcome all trouble, and in operations of any magnitude, it amply repays any difficulty that may be experienced in adjusting it.

In the large majority of cases after the operator has become a little familiar with it, it can be readily applied for cavities on the approximal surfaces of the incisiors, and if gained, there will be as little trouble in adjusting it for approximal and crown operations in the bicuspids and molars, and also in many instances of buccal decay. To insure success the material should be tough and elastic, which characterizes the best quality; the holes should not be too large, large enough to avoid any danger of rupture in adjusting, and sufficiently small to insure a water-tight joint at the neck of the tooth. The divisions between the holes should be broad enough to completely occupy all the space between the teeth when the rubber is distended, in this respect a little experience will soon enable the operator to judge correctly.

After the dam is in position it will assist in retaining, to wipe the teeth perfectly dry with spunk or bibulous paper, the rubber will not slip as easily on a dry surface, but if the shape of the tooth is unfavourable to its retention without other means, a ligature will be found an effectual fastening. The edge of the rubber should be inverted, after it is on the tooth, so that it will be toward the margin of the gum. If a ligature is used, that will accomplish it as it is crowded up the neck of the tooth, but if a ligature is not necessary to hold the rubber, the inversion can be accomplished with a thin burnisher or other blunt-edged instrument. It is especially essential that the edge should be inverted in cases where the decay extends beneath the margin of the gum, otherwise it will be difficult to carry it above the cervical wall. With right management the rubber can be carried safely above the cervical wall even in extensive decay at the neck of the tooth. The dam can be adjusted wherever floss silk can be forced between the teeth, and where that cannot be the teeth can be sprung by wedges, or a thin instrument. The easiest manner in the majority of cases is to carry the rubber down with the ligature. A thousand and one ways will suggest themselves upon repeated trials, and nothing but experience is needed to insure success. The material can be procured for four dollars per yard. A yard will furnish material sufficient for one hundred experiments at least. Cut it for use as wanted in sections about eight inches square, Use fresh pieces for the back teeth, and these can be used again for the incisors, cutting the holes nearer the margin. Wash the rubber thoroughly with soap

and water on first getting it. Each piece should be washed as soon as used and hung up to dry. Any one procuring the dam and following these directions, will immediately after using one yard, want another.

THE APPLICATIONS OF HOMŒOPATHY TO DENTAL SURGERY.

BY THOMAS NICHOL, M.D., MONTREAL.

No. 2.—*Calendula Officinalis.*

The sphere of Calendula is not so wide as that of Arnica, but in its place it is quite as valuable a remedy. It is the specific remedy for incised and lacerated wounds, and has specific power to prevent or diminish suppuration in such cases. While Arnica is the remedy for bruises, contusions and sprains without laceration, Calendula is the true specific for external wounds, and lacerations with or without loss of substance. This remedy, too, affects the healing without leaving any prominent eschar. Dr. W. J. Clary, of Monroeville, Ohio, says that "if applied constantly, gangrene will not follow, and I might say that there will be but little, if any, danger of tetanus."

These statements are amply confirmed by numerous cases reported in the German journals, of which the following is an abstract:—An apothecary named Flügge was instrumental in introducing this remedy, and in order to convince some visitors who doubted the marvellous efficacy of its powers, he made a deep incision in his hand with a carving knife. Into this he poured some *aqua Calendulæ*, tied it up, and next day appeared before the company with the wound perfectly healed. A laborer had his right index finger crushed, including the bone. The loose pieces of bone were taken out, and the *aqua Calendulæ* was applied. The cure was speedily completed and without suppuration. A carpenter almost severed his foot by a blow with an axe; Calendula was used, and in six days the wound had healed perfectly. Dr. Schneider, the introducer of this remedy, fell out of his carriage, smashing his leg, causing a severe compound fracture; he applied a compress saturated with the *aqua*, and was healed in a few days. Many similar cases may be detailed, and Dr. Franklin, of St. Louis, and other American surgeons, bear similar testimony to the curative virtues of this remedy in the case of wounds, having tested it thoroughly in the armies of the South-west, after the battles of Pittsburgh Landing, Murfreesboro', etc.

In dental surgery it is useful after the extraction of roots and teeth, and also after any severe operation. Dr. James W. White says that "a few drops to a goblet of water, as a mouth wash, is very comforting to the patient when undergoing the operation of the removal of salivary calculus from the teeth." It is well adapted to patients of a strumous diathesis.

The aqua Calendulæ, originally used by Dr. Schneider of Tulda in Germany, is thus prepared. The fresh yellow flowers are introduced into an apothecary's flask, which is loosely filled with them, and then tightly corked. It is suspended from a tree, exposed to the sun, where it is allowed to remain until late in the fall. The sun extracts from the flowers a liquid which collects at the bottom of the flask, and which has to be poured off every now and then, and carefully preserved in a tightly corked bottle. After the flowers have settled at the bottom they are taken out and pressed, in order that the whole of the liquor may be extracted. At first it is turbid, having an astringent, acrid and bitter taste, and the peculiar Calendula odour; it is somewhat viscid and glutinous, deposits a grey sediment, and if kept in the warmth is apt to become mouldy. A second preparation is obtained by mixing one-third of a bottleful of the flowers (and leaves) with two-thirds of that bottle filled with a mixture of alcohol and water, equal parts. This preparation must be diluted with water when used, lest the alcohol should irritate the wound.

I have never used either of these preparations, having obtained excellent results from a tincture prepared by macerating 8 ounces of the flowers and green leaves (equal parts) in a pint of dilute proof spirits, and of this tincture I add a teaspoonful to a teacupful of water. I have had good results from the use of an infusion of the dried plant. I am in the habit of growing the Calendula, which is the well-known marigold of our gardens, drying the flowers and green leaves in the sun for future use.

NICKEL PLATING FOR INSTRUMENTS.

BY H. L. HARRIS, D.D.S.

When it was first suggested to plate dental instruments with nickel, I thought it one of those hasty conclusions from which we are sure to recover; but after a year's experience with my forceps and pluggers, I feel it a duty to commend and recommend it to the profession.

If we leave our steel instruments over night, with the office window open, and indeed in any case, time will tarnish them; whether by moisture, contact with acids, gases, &c. The same with articles which are silver-plated. I found the sulphur of my rubber dam soon destroyed the silver plating of a few articles in my case, and now I prefer nickel to silver. The finish of my nickel-plated pluggers which I have daily in use, is just as brilliant to-day as a year ago, and I find that silver-plating cannot stand inspection beside nickel in any case. It resists the action of the atmosphere and heat perfectly. The fluid of the oxy-chloride of

zinc does not tarnish it, and even mercury has no effect upon it; while it is as hard plated as if the entire instrument was pure nickel. Indeed, I believe it will eventually supersede silver plating. Instruments are easier kept clean; pleasanter to handle; handsomer to look at; not one particle impaired in temper or anything else, and more durable, and I can confidently recommend it to the profession. I learn that one firm has actually commenced to put a heavy coat of nickel upon all exposed parts of their vulcanizers, to preserve them from rust and discoloration.

MIXING PLASTER FOR IMPRESSIONS.

BY H. G. KENNETH, L.D.S.

I have been in the laboratories of many of my *confrères*, and have never seen any of them mix their plaster of Paris for impressions as I do, and I flatter myself that I get the best models I have ever seen, not a bubble or a flaw. For plaster impressions of the mouth my plan of mixing is the very best, and will cause the plaster to set immediately. I simply put it and the water in a wedgewood mortar, and grind them rapidly until sufficiently incorporated. I think we save much annoyance and loss of time by making use of such little hints.

ASTUTE INVESTIGATIÓN.

BY A PHYSICIAN.

As an evidence of the amount of investigation really given by the few dentists who oppose the discriminating use of amalgam for filling cavities in the teeth which cannot be filled with gold, I will relate a case briefly which, to-day, came under my observation.

A lady patient of mine, whom I had had occasion to salivate in order to save her life, some time after her recovery sent down to her dentist to make an appointment for an examination of her teeth. At the appointed hour she attended, and when the astute dentist looked at her teeth and saw, alas! almost a total wreck, destruction of the alveolar processes and loosening of the teeth, he immediately got excited, and assured the lady that two amalgam fillings in her teeth had caused all the injury. She was greatly alarmed, of course, and charged the dentist with maltreating her, as he himself had filled the teeth! Explanations and examinations followed, and the fillings were found to be of *tin!* The *denouement* is suggestive to my mind, and should be to all intelligent reasoners.

TREATING DISCOLOURED TEETH.

By X. Y. Z.

I have tried many things for bleaching discoloured teeth; have succeeded with some; failed with mostly all. Some are too caustic, others too easily deliquesced and their normal effects neutralized.

In all cases of discoloration which I can have under my control, I thoroughly remove every particle of decay, dead pulp, &c., and take chloride of lime 1 part; oxy-chloride of zinc 1 part, mix as usual with the fluid of the latter, and fill the cavity, renewing several times in the course of a month. The chloride of lime must be fresh and have been kept close corked. I was indebted to a friend a long time ago for this simple method of treatment. It has served my purpose very nicely several times.

PREPARED CHALK AND LIME WATER.

BY W. G. BEERS, L.D.S.

Among the varieties of dental decay met with, none present a more ominous appearance than those cases in first dentition where the enamel softens and flakes off, and the caries attacks points of the teeth the most exposed as well as the most remote. It is frequent in large families of children, and peculiar to certain families, and seems to prevail where hygienic treatment is most conscientiously observed. Salivary calculus does not form to any usual extent upon these teeth; though the gums are generally inflamed, and covered at their margins with a slimy, yellow scum, as if deposited from the food, but evidently a salivary deposit.

In the rage and rush after novelties, we are all too apt to ignore remedies effectual for such conditions of the teeth, which were once very popular, and I think those who have ceased to prescribe prepared chalk and lime water, for such cases as above mentioned, have not succeeded in discovering anything better.

In one American family of five children, whose teeth were extremely sensitive, and decaying very rapidly—the youngest five years of age having fourteen cavities, I attribute a decided improvement, to the regular use of chalk and lime water as prescribed, and I might illustrate from several other families, to show the positive healthy reaction in the acid secretions of the mouth, and the improved state of the blood, and a modification, or cessation in the character of the decay. The method of administration is simply to use the chalk as a dentifrice, rubbing it at night between the teeth in every direction with the finger, and taking a wineglass full of lime water three times a day for from two to four months.

PROCEEDINGS OF DENTAL SOCIETIES.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

BY J. BOWES, SECRETARY *pro tem.*

A meeting of the Board of Directors and Examiners of the Roya College of Dental Surgeons of Ontario, wash eld in Toronto, commencing on Tuesday, the 17th of January.

There were present Messrs. H. T. Wood and T. Rowe of Cobourg; G. V. N. Relyea, Belleville; F. G. Callender, Toronto; A. C. Stone, London; L. Wells, Simcoe; and J. Bowes, Hamilton

The principal business of the meeting, other than examining candidates and granting licenses, consisted in taking into consideration and adopting an amendment to the "Act respecting Dentistry." After discussing the matter pretty fully, an amendment was agreed upon, and a Committee appointed by the Board to lay it before a Special Committee previously appointed by the Legislature for that purpose.

After some discussion and consultation with the Committee appointed by the House, it was thought best to withdraw the bill for the present, in order to get a full expression of opinion from the dentists of Ontario, as to what changes are required in the Dental Act. In order to lay the matter fully before the profession, a copy of the amendment, as adopted by the Board, will be sent by the President of the Ontario Dental Society to every dentist in the Province, one month previous to the meeting of said Society.

There were six candidates for examination. The following five passed the ordeal successfully and received certificates of L.D.S., viz.:—

James Ferguson,.....Bowmanville.
James Woods .....Toronto.
Thomas Wilson.....Bond Head.
Thomas W. Raines.....Almonte.
Samuel Musselman .....Markham.

One failed to come up to the required standard.

Applications were also received from three others, but as they had not served the prescribed length of time, the Board could not entertain them.

Licenses were also granted to six persons under the five years' clause of the "Act respecting Dentistry."

Mr. F. G. Callender, of Toronto, resigned his position as a member of the Board, and Mr. J. W. Elliot, of Toronto, was elected to fill the vacancy thus caused.

Montreal Dental Society.

BY L. J. B. LEBLANC, L.D.S., SECRETARY.

A voluntary society, bearing the above name, was organized on the 10th of last month, for the purpose of cultivating closer professional relations among the members of the profession in Montreal, a better understanding on points of ethics, &c., and to encourage a high standard of excellence in dental science and art. Meetings are to be held regularly on the first Monday in each month; subjects for discussion, exhibition of improvements, and a free revealing of "secrets," &c., are to form a regular programme. It is expected that a *local* society such as this, holding monthly meetings, will do more to benefit its members, than the Provincial society which meets only twice a year; and living in the same city, its members are sure to become more united, and to reflect credit upon the profession. The following were elected office-bearers:—

President—W. George Beers, L.D.S.

Vice-President.—C. F. F. Trestler, M.D., L.D.S.

Secretary.—L. J. B. Leblanc, L.D.S.

Committee.—Charles Brewster, L.D.S.; J. H. Webster, L.D.S.; C. Webb, L.D.S.; L. Globensky, L.D.S.; R. A. Alloway, D.D.S.

March 6th.—The regular monthly meeting was held this evening at the office of J. H. Webster. Present, W. G. Beers, C. Brewster, C. F. F. Trestler, J. H. Webster, C. J. B. Leblanc, M. F. E. Valois, J. Young, E. Matthieu, S. Globensky, C. Nichols, A. Wright, J. Lauder. Apologies from Drs. Bernard, Alloway and Trestler, jr.

The idea of appointing younger members to give a brief reading from some dental writer was originated for the purpose of accustoming them to the sound of their own voices, and so persuading them to take more active interest in the proceeding. Mr. Young opened the programme with a reading descriptive of an extraordinary case of *Entozoa*. Mr. Nichols read a paper on "Cheap Dentistry," referring strongly to those who work for reduced prices, by which means they every day degrade the profession. This professional degradation always returns on its author. Mr. Brewster then read an interesting paper on the "Manufacture of Artificial Teeth," giving the American manufacturers hard "raps over the knuckles" for the defective *strength* of their teeth compared to those made in England. Specimens were exhibited showing the porosity of the former, and the density of the latter. Every praise was given for improvements made in shapes shades, but it was considered that since the introduction of vulcanite the real strength of the tooth material was not as good as before, and that even the plate teeth of to-day were not as dense and strong as the plate teeth of twelve

years ago. The paper will appear in the next number of the C. J. D. S. Mr. Beers read a paper entitled "Teeth at Birth," giving a description of two cases which came under his observation in Montreal, and referring to historical cases. This paper will also appear in the next number.

Discussion then followed on matters of interest to the profession. Mr. Leblanc was appointed to read an essay at the next meeting; and Mr. Valois to give a reading. Discussion, and experiments with nitrous oxide on rabbits, &c. The next meeting will be held on the 1st Monday of April at the office of the secretary, L. J. B. Leblanc, 581 Craig street.

The society intend devoting some time and attention to microscopical studies.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

BROOKLYN DENTAL SOCIETY.

Dr. J. S. Latimer. In cases of exposed pulps. I generally use creosote pretty thoroughly for two or three days, filling the cavity loosely with cotton, and then before filling with the os-artificiel, I always take a small piece of tin foil, cutting it so as to fit easily to the bottom of the cavity, put on it the least bit of thick sandarac varnish, and placing it in the bottom of the cavity, with the varnished side next to the pulp, I gently put it down to its place with an appropriate instrument.

The tin foil being very pliable and easily adjusted, together with the varnish which spreads out over the bottom of the cavity, completely covers it and prevents irritation of the pulp when the os-artificiel is applied. I find the amount of pain very much lessened by this method, and the operation thereby rendered the more pleasant to the patient. I do not usually fill the cavity entirely with the os-artificiel, but only partially so, filling the remainder of the cavity with Bevin's stoppping. I prefer this material, because in case of trouble it is more easily removed than the other. I always wait a few days to see if all goes right before performing the permanent operation.

I have formerly expressed myself as almost discouraged with regard to bleaching teeth; but I have had reason to change that opinion within a short time. A few days ago I saw a tooth I had bleached three years ago, and the color was decidedly good; also another case of a lady for whom I bleached a tooth and filled it temporarily; one week after she came back with it nearly as much discolored as at first. I bleached and filled it again, this time permanently; it has been two years since it was done. I saw it a short time ago, and the colour was excellent. I speak of this because it has been an encouragement to me, and I judged it would be a matter of interest to my professional brethren.

"*Cause and Treatment of Caries of the Teeth.*" — Dr. A. H. Brockway. This is a subject which embraces nearly the whole field of our profession, if it is thoroughly discussed, and I feel that it is one that calls for our best thought and judgment.

A few years ago the dentist would consider his duty performed by filling such cavities as could be filled without too much expenditure of time and material, getting over the difficulty of very large operations, and ridding himself of diseased teeth by extraction. The day for such treatment has passed by, and in the light of the present time the conscientious practitioner will have demands upon his intelligence and skill that will tax his resources to the utmost, and his treatment of different cases will be exceedingly varied, his aim being to retain all the teeth possible, and often the roots of teeth, when it is important to preserve the contour of the face, as well as for the purposes of mastication.

We are not at all clear as to the cause of caries. In general terms it may be stated as being produced by some agent favoring the renewal of the mineral portion of the teeth. The treatment is so extremely varied, that we could better describe it if we had a case in hand. The carious portion, however, must be removed, and in its place some material substituted that will resist mastication and restore the lost portion. Then arises the question as to what we shall use. It has been pretty generally decided that gold is the best material to use, and yet I think there are many exceptions to that rule. It seems to me that any dentist who uses only gold must do some injustice to his patients. To obtain success in gold, it must be used thoroughly, the cavity must be easily get-at-able, and the tooth kept perfectly dry during the operation. Another consideration to be taken into account is the strength of the tooth structure, which must be sufficient, or the tooth will give way, and failure result. My judgment is that many cases are better treated by some plastic filling than with gold. I think the object of the dentist should be, not so much to see what he can do as to observe the interests of his patients, and the uses to which the teeth will be subjected. There are many cases coming under my care which I treat with other materials than gold.

I wish enlightenment concerning caries which attack the labial surfaces of central and lateral incisors near the margin of the gums, extending often so as almost to completely girdle the tooth. I have such a case in hand at present.

Dr. Jarvie. In the treatment of caries, I think we should take into consideration the fact that the teeth differ very materially from other bones of the body, inasmuch as the lost parts are not replaced by nature as they are in the bones. In many cases, especially on the approxima

surfaces of the teeth, decay can be removed by filing between them when it is superficial; but when it extends through the enamel, we must use some material to restore the lost portions of the tooth structure. I think gold is preferable by far in the majority of cases. After filling a tooth the question is often asked by patients, "Is that tooth likely to decay again?" and we have to answer the question the best we can.

The place where fillings most always fail first, is at the cervical portions of the tooth, owing to various circumstances: that part of the cavity is the most difficult to thoroughly prepare and fill, and there is a liability of leaving an excess of the filling, especially where the cavity extends under the margin of the gum; then there is a tendency for the food to lodge between the teeth, and when left there by the negligence of the patient, the tooth is exposed to the destructive agencies engendered by the decomposition of the matter crowded into the spaces. I have often taken out the remaining portions of tin fillings which have worn down very much, and have been surprised at the good condition of the tooth structure underneath, finding it sound and firm. I think it can often be used under circumstances which would cause a failure if we were to attempt to use gold. The tin foil being very soft, packs closely against the walls and prevents leakage. In children's teeth tin is often the best material to use, on account of the difficulty we have in controlling the restlessnes of the little patients.

Dr. J. S. Latimer. In such cases as Dr. Brockway has referred to where caries has attacked the labio-cervical portion of the tooth, the great trouble is that the dentine is so exceedingly sensative that we cannot prepare the cavity as thoroughly as is demanded, and the probability is that even after we have done the best we can, decay will commence again. In treating such cases as these, I advise the use of prepared chalk, lime water, floss-silk, and brushes. When I have finished putting the teeth in order, I say to my patients, "I have done my part, and have told you how to manage your part. You can, if faithful, prevent the recurrence of decay: brush your teeth thoroughly three times a day, and use a good tooth-powder."

Here is a case in point. A lady, sixteen years ago, had her teeth filled by a dentist of this city. He put in many amalgam fillings, and but few gold ones. He gave her thorough instructions about keeping her teeth clean, and dismissed her. Her teeth have not been examined during these sixteen years. She came into my hands a few days ago; but after a most careful examination I found nothing to do. Her faithfulness had accomplished its perfect work. Her health during this term of years had been moderately good. I speak of this for the encouragement of us all.

Drs. Brockway, Cook, and Mirick commented upon, and approved of, the teachings of the late Dr. Arthur, Philadelphia, concerning the removal of decay by filing, especially on approximal surfaces and afterwards polishing thoroughly.

Dr. Mermier said he was a living witness of the excellence of just such treatment, as he had his two superior central incisors treated in that manner over twenty years ago, and they are now free from decay.

Dr. Bogue. I rise to dissent from all this last teaching to which we have listened, as I cannot accept it fully. It seems to me that to have the teeth separated in this manner by filing, and the natural covering taken off, is not right. We hardly need any argument to prove that at the time such practice was taught by Dr. Arthur the least expenditure of time and trouble was the doctrine among dentists. The theory of decay was not so well understood in those days as now; neither was thorough cleaning of the teeth nearly as much insisted upon by the dentists as at present.

I do not think the Creator makes any mistakes with reference to the shape or structure of the teeth. The enamel is the natural covering of the exposed portion or crown of the tooth. To ruthlessly remove this by filing, and also spoil the shape of the teeth, I wholly dissent from. Where decay has not gone through the enamel, it may be well enough. I think that faithful care, and not the health of the patient, is the principal thing in the preservation of the teeth.

To illustrate this I will relate concerning one case of a young lady who was last under my care about three weeks ago. I had filled quite a number of cavities for her in 1863. Two of the incisors, central and lateral, were pulpless and discolored. I bleached them and filled them by hand-pressure. During the time she spent at my office she got such a drilling in the doctrine of taking care of the teeth that it followed her from that time to this. Her teeth were frail then, even now they are frail; her health has been poor during these years, and yet under these adverse circumstances I found only two fillings that needed removing. Such a result as this is due alone to her persistent care. She told me that she had hardly ever failed during the seven years to brush her teeth immediately after finishing her meals.

Had I in that case adopted the practice of filing the teeth apart, the natural appearance of the teeth would have been sacrificed, and the comfort of the patient decidedly interfered with. The teeth, especially the bicuspids and molars, are naturally arranged so that there is very little space between them—the object being that no food should be crowded between the teeth. If I had separated them with the file, and destroyed this unity and left spaces, some of which would have been of a V-shape,

the food in mastication would have been crowded down between the teeth, irritating the gums, and seriously interfering with the order of nature.

Again the flat surfaces between the teeth left after the use of the file, cannot be so readily cleaned by the brush, as the naturally rounded surfaces of the teeth as we find them in their proper development.

Dr. Mills. If I were asked what I would do for the treatment of caries and I could resort to but one method, I would say, treat with *extreme cleanliness*, which, in my opinion, if it was faithfully followed, would do more to arrest the progress of caries than anything else we could do with all the other methods we have to adopt. No one thing, in my opinion, is of more vital importance than healthy and clean teeth. Then let us as much as possible proclaim with earnestness that cleanliness is the best treatment for dental caries. It has often been referred to in the meetings of dentists, that we ought to put before the public some intelligent instructions in the way of a book. In this direction Dr. Lyon has commenced the distribution of just the kind of teaching that the masses need. The title of the book is, "The Teeth, and how to take care of them."—*Cosmos*.

2ND DISTRICT DENTAL SOCIETY, N. Y.—The subject for discussion was: "The Method and Propriety of Extirpating Pulps."

Dr. Marvin was the essayist. His paper reviewed the subject strictly from a conservative standpoint.

Dr. Elliott says he does not feel warranted in trying to save pulps that had been inflamed. Thinks if they are once inflamed they are reduced in their recuperative power. Caps pulps from the ages of fifteen to thirty-five. Prefer patients of nervous, sanguine temperaments. For the last eight months has kept a record. Has had uniform success. To prepare pulps for extirpation, devitalizes with arsenic and creosote. Is not afraid to leave it in the tooth indefinitely. Thinks one application will not necessarily destroy the whole pulp. Acts on the vital principle. Don't know just what that is. Does not think it acts on the circulation. Believes the pulp can be restored to its normal condition of health if partially destroyed. Admires those dentists who endeavour *intelligently* to save inflamed pulps.

Dr. Hill: Believes some pulps can be capped and saved. Would not attempt to save one less than thirty years old. Does not believe a pulp can be restored after an application of arsenic. Can not find anything laid down in books to prove the fact, and has consulted physicians upon this point, without being able to elicit any proof of its being done.

Dr. A. H. Brockway says: Nerve tissue can be reproduced. Referred to cases where teeth had been removed from their sockets, replaced, and

assuming their former functions of use and comfort. Does not use *morphia* with arsenic and creosote for devitalizing pulps. Covers the application with cotton and sandarach varnish, to protect the tissues from the arsenic.

Dr. Marvin: would add wax for a covering, giving greater security from the danger to which the process as well as the tissues are exposed.

Dr. Elmendorf to make greater security with the stoppings named, he applies the rubber dam, to facilitate the operation.

Dr. A. H. Brockway asked if any one present saved all pulps alive? Said Dr. Atkinson *thinks* he does.

Dr. Mills says he *tries* to save *all*. Has not capped a large number. Knows of three that had died. One, a young subject of a low toned organization. Was inflamed. Was a six-year molar. Pus discharged from it. Treated it with aconite and creosote, alternating according to symptoms. Considered it restored to its normal condition, but it *expired*. Recognizes the fact that some cases are more favourable than others. Does not think because *he* failed that an *intelligence of a higher order* would necessarily fail. Does not apply *death* to a pulp, knowingly, any more. "Does not give *life*, does not feel that he has any right to take it."

Dr. Marvin saturates bibulous paper with creosote and packs it gently over the exposed pulp. Then applies oxy-chloride of zinc. Thinks the paper prevents the excruciating effects of the chloride of zinc. Thinks some pulps do live after being capped. He wants to think the profession making some advance.

Dr. Elliott looks upon the creosote as the agent of success, and not the oxy-chloride of zinc cap. Saturates freely with creosote. He adds that he believes arsenic destroys cell by cell, molecule by molecule; therefore, its action could be arrested.

Dr. Marvin believes if this action of arsenic is by the continuity of molecules, its action would continue in its power to destroy. Leaves the arsenic in twenty-four hours; if not sufficiently devitalized, renews the application until he is able to remove the whole pulp. He added that he had treated a few pulps by capping with oxy-chloride, had no reports to make. Was not clear in his own mind, and did not know that any one was.

Dr. Hurd said that the trying to save exposed pulps alive by capping was no new thing. He had gone over the field of experiments in this line and had decided to destroy all pulps exposed, by the application of arsenic and creosote. Thought the nerve extirpated alive was the safest way, but it was accompanied with so much pain, patients would not submit to it. Lets the arsenic remain eight days. If it remains longer will cause periostitis. Says if the pulp is removed after exposure it is a safe operation;

to cap is not. Says oxy-chloride is a cruel application, and *will* destroy the pulp. It may be quiet for a time, but a *volcano* is there, and one day it will show its power, and bring sorrow to those who have capped the pulps. Says a great number of those that have been capped and heralded as successes, have been extracted, because of the mischief they have done. Says the albumenizing effect is only a theory, and is not proved in practice. May save one pulp out of ten; but the nine will scare us out of the practice if we see them again. But says the troublesome ones do not return, they go to another dentist, and complain of the practice. He extirpates and is *always safe.*

Dr. Mills said if it is proved that *one* could be saved, it was evidence to his mind, that *many more* can be, based upon the *same principles* on which the one was saved. And believed it to be our *duty* to seek the *light*, and walk in it *willingly* and *faithfully.—Register.*.

SELECTED ARTICLES.

INFLUENCES OF DENTAL ORGANIZATIONS.

By G. C. Daboll, M.D.S.

In considering this subject, if we look at the character and nature of dental organizations, we shall perhaps most readily discover the attributes that have an elevating influence upon the dentist, and through the individual upon the profession at large.

Whatever tends to educate man, tends to elevate him. This holds as good in the secular, as in the moral and religious concerns of life. In the degree that Dental Associations give the dentist opportunities for acquiring knowledge, they have an elevating tendency. That they do give him such opportunities, and that the influences are direct and potent for good, we think will not be difficult to show. Dental Associations are a stimulus to thought from the discussion of interesting subjects, pertinent to the profession, and having a direct bearing upon its practice, thereby reaching the vital part of every dentists professional life.

From the essay that opens the subject, through its entire consideration, every idea advanced is generally the result of practical knowledge. It is seldom that a crude theory is put forward, and if we put into intelligent practice the ideas advanced, they are sure to accrue to our benefit. Much that is eliminated may seem trivial and worthless unti some sudden and unnexpected dilemma may compel an application that will demonstrate a value totally beyond our expectations. Much good is

derived from the opportunities afforded for comparison, by which we are incited to greater effort from the natural desire to equal those who have from experience, made greater progress. Pride is stimulated and the result is seen in more elaborate operations, more careful attention to the details of general practice and a higher standard of excellence.

Following this naturally, and as a proper sequence, comes the increased value put on the services rendered, as an equivalent for increased effort; cheap professional services are generally worthless. An estimate of the progress of an occupation may be made by observing the quotation of its values. A just man demands compensation according to the character of the service rendered. What costs but little is generally disposed of cheaply. Excellence in dentistry necessitates great labor, as we all can testify, and when a person really attains that, he is not very likely to be found among cheap dentists. With a better compensation comes an increased desire to experiment with new appliances and inventions, to keep pace with competitors to accomplish greater results, and thus the original benefit is constantly increasing with compound interest. The clinics that now form a prominent feature of Dental Associations have given a practical impetus and influence to the profession that has resulted in much good. What a man sees with his own eyes he can frequently avail himself of, whereas he is often totally unable to get the least benefit from the abstract consideration of the subject. As a medium for the illustration or demonstration of new systems or ideas, the clinic is invaluable, for many lack the power to express properly in words what is perfectly familiar to them practically. In the clinical department, the Dental Association takes the character in a measure of a Dental College it has been the only school for many a *good operator to-day.* Many a difficult problem has been solved in operative dentistry, from a few ideas gathered at a clinic.

There are many operators who excel in special operations, but our profession not having got to that point where it can support specialties, it is necessary that the dentist should be as well informed in all points of his profession as is possible. Now the influence of Dental Associations is to generalize practice, not at the expense of that which is already satisfactory, but by affording an opportunity to acquire information on points that are lacking, and the dentist is enabled to add many operations to his practice that he has hitherto been compelled to avoid.

The subtle influences arising from the social character of Dental Associations have much to do with the benefits derived therefrom. "Ye dentist of ye olden time" was a good deal of a hermit, bottling himself up and looking with suspicion at the approach of anything like

fraternity on the part of his neighbour, fearing for the safety of his long cherished secrets in method or operation, and trembling with apprehension of some deep design. The days of private laboratories and operating rooms are over; the social influences of the Dental Association have softened the asperities of professional life, and brought about an era of good feeling and fellowship that ages of isolation could never have accomplished. The dentist finds that he is one of a numerous family, the members of which are dependent on each other for the greatest good to each. He realizes that isolation is a source of weakness that to exclude himself and what little he does know, is more injurious to himself than others. The social phase brings out all this, opens the heart, displays the best side, and developes the better nature. The class must be elevated through its individuals. Men come out the strongest under social inspiration, the wits are sharpened and all the faculties are keener; and he who has a problem to solve can go from social intercourse with renewed vigor and better hopes of success. At no time in the history of dental science has the profession made such sure and rapid progress as since the inauguration of dental societies. This progress cannot be attributed to our Dental Schools, for not one dentist in a hundred ever attended one. To Dental Associations we owe our code of ethics; to them we owe our legal status, and a thousand influences that have made us better operators and developed a professional manliness that was once unknown. Let every man, then, give heart, voice and time to sustaining these most important institutions, and the dentist who sees nothing good in them, and holds himself aloof, will find to his cost that he has missed golden opportunities.—*Dental Advertiser.*

WHY DO WE NOT INSERT MORE PIVOT TEETH?

BY GEO. A. MILLS, BROOKLYN, N. Y.

This question suggests itself to me from the results so often noticed in the removal of the roots of the front teeth, I am fully aware that no little prejudice exists with both patients and the dentist respecting the exhibition of gold in the mouth, where the teeth are much restored in their contour. Now, the coolness with which many advise the extraction of fractured teeth the gold will show, is painful to think of; far better that it should, because until dentists, as a rule, supply much better substitutes than they do. Is this course pursued from a conviction that it is the best that can be adopted? I think not. It is my opinion that it is done to make our practice less burdensome, and with the belief that plate work will come to our relief.

Sad relief to a cultured eye or to acute sensibilities! Does a metalic, rubber, or other base, improve the condition of things? Is it better that the mucous surface of the mouth should be covered with a foreign substance of any description, and the whole expression of the face changed by the removal of roots in the most expressive portion of the mouth? In a large proportion of these cases they can be treated in a manner that will do away with the necessity of extraction and the introduction of plates. If the crowns of these teeth must be sacrificed by prejudice, neglect and bad dentistry, why not retain the roots clean, and make healthy, and fill the canals as solid as it is possible, giving a firm basis on which to set well-selected and arranged pivot teeth? Giving greater satisfaction than any other substitute arranged on plates of any material. I am well aware that many seeming objections will present themselves on the introduction of this subject; but they are answerable more to bad dentistry than to any other cause. I can refer to a few cases with satisfaction, as a proof of what has been and may be done with intelligence and care. The failures have occurred more from a want of thoroughness than for any other reason. It is true that circumstances will indicate more than one way of procedure; for instance: when the case will not admit of the root being filled with gold because of its weakness, there are materials that prove efficient for terms of years, and give more comfort than plates can do.—*Cosmos.*

ON BICHLORIDE OF METHYLENE AS AN ANÆSTHETIC.

BY S. JAMES SALTER, ESQ., M.B., F.R.S., DENTAL SURGEON TO GUY'S HOSPITAL.

I am anxious to direct the further attention of the profession to the bichloride of methylene as an anæsthetic for operations on the teeth; because, from personal experience, I am convinced of its great excellence, and because I feel sure that exceptional circumstances have stood in the way of its fair appreciation. My especial object in sending this communication to the 'Dental Journal' is to induce my professional brethren to try it for themselves, and I believe (if so tried) its many advantages will soon become manifest.

The time when the methylene-chloride first came into use was singularly unfortunate. The protoxide of nitrogen had then been in vogue some little time, and its advantages were keenly appreciated by those who required a quick, easily administered, and safe anæsthetic. The tedious, distressing, and often noisy exhibitions, which chloroform had entailed, had thus been satisfactorily superseded, and a very large number of practitioners were in the daily habit of employing the nitrous oxide to extinguish sensation during the otherwise painful operation of tooth-

extraction, were at home with it, and used it fearlessly and with comfort. And there is another circumstance which has certainly not contributed to an even competition between nitrous oxide and the methylene bichloride. For when the latter was advocated for the first time there were large material interests involved in sustaining the supremacy of the nitrous oxide. I would not suggest that anything unfair has occurred on this score; but material interests are, often without intention, very influential; and one is apt to regard a boon, which has been costly and difficult of achievement, with higher consideration than one which is simple and inexpensive.

In the manufacture of nitrous oxide there has been very considerable outlay, and much costly apparatus has been devised to meet the peculiar physical conditions of the material employed, and it is not likely that such ventures and such employment of capital would be freely yielded to a simple and unpretending competitor. Still, I venture to think that, when these two rapidly acting anæsthetics are fairly tested and honestly compared, the methylene chloride will be generally preferred for operations on the mouth. And I suspect that, if the methylene had been much used and had become familiar before the nitrous oxide, we should have heard little of the latter.

In using the anæsthetic I have always had the assistance of my friend Mr. Rendle, the Surgical Registrar of Guy's Hospital, who has administered it more than 350 times without an untoward case. No doubt the rapidity of its action depends somewhat upon its mode of inhalation; but this is not all. It has been supposed by some that the drug sold as bichloride of methylene is really a mixture of chloroform and ether; but, certainly, such is not the case with that employed by Mr. Rendle for my patients. That which we now use is prepared by Messrs. Hodgkinson and King, and is a constant body, having a specific gravity of 1·350 and a boiling point 120° F. Its formula is CH_2Cl_2.

The physiological effects of the methylene are totally distinct from those of nitrous oxide gas, and more nearly approach those of chloroform. But there are characteristic and important differences from the latter. The stage of excitement is usually wanting, or nearly so, and the patient passes rapidly from consciousness into a state of silent and quiet insensibility. There is one point of much interest and importance, namely, the long sustentation of the insensibility in comparison with the brief time in which it is being induced. A patient will often remain insensible to pain for four or five minutes, when the breathing of the vapour has only occupied a minute and a half. Again, nausea is not common, and vomiting very rare indeed. I have not seen a case. Indeed, *as a rule*, there are no distressing after-effects.

Then the method of administration is singularly simple. I believe it originated with Mr. Rendle. A stiff leathern cylinder is employed; it is about five inches long, three and a half in diameter, and somewhat flattened laterally. One end is open and fits over the patient's mouth and nose; the other is closed, but perforated with some twenty small holes to admit a little air. Hanging into the cylinder from the open end is a bag of flannel, or some other textile fabric, into which the methylene is poured when administered. This simple apparatus is then firmly applied so as to embrace the mouth and nose, and no further air is admitted than that which passes through the small holes; unless, indeed, the patient exhibits signs of distress, when the inhaler may be slightly raised or tilted on one side and a little air allowed; but the patient is soon beyond the power of perceiving discomfort, and is ready for operation.

Of course, the size of the apparatus and the amount of methylene used must depend upon the age, &c., of the patient. A drachm is the dose for an adult. It is necessary to employ a gag, as with the nitrous oxide.

I might record a large number of illustrative cases showing the simplicity, the safety, and prolonged efficiency in operations of the bichloride of methylene. I will, however, only mention one (by no means exceptional) that I have had since I began writing this communication.

A lady came to me yesterday a journey of sixty miles: she inhaled methylene for ninety seconds, and was insensible for four minutes, during which time I extracted five teeth and one bicuspid root. Further proceeding was suspended from the bleeding. She rapidly recovered, and, having done some shopping, returned the same journey to the country, and came back to me this morning, when she again inhaled methylene, and became insensible rather more rapidly. I then removed the remains of four wisdom teeth, two bicuspids, and five separate molar fangs. She regained consciousness in about five minutes; but, feeling somewhat exhausted (she was rather delicate, and was fatigued by her three journeys), she lay on the sofa a short time and had some sherry, when she recovered; and, having paid some calls in town, returned the same journey to the country. The lady was alone, and made her first return journey, and started for the second with perfect comfort, and as if nothing had happened. There was but one inhalation on each occasion, and the operations were performed without hurry or need for hurry.

Now, I would ask any candid person if all this could have been effected with nitrous oxide as well? or could it have been done under the prolonged action of chloroform with equal facility and absence of *attendant* and *after* discomforts?

In thus advocating the claims of the bichloride of methylene, I hope

I have not said too much. I have no object or intention in doing so; but, having strong convictions on the subject, I wish that that the anæsthetic may receive wider and more varied test.

Surely it will be conceded that it is an enormous advantage to have an anæsthetic which is a *liquid* in all possible atmospheric temperatures; and one which, while simple in its application and rapid in its action, is sufficiently protracted in its effects to allow of repeated operations, and to afford time to meet those casualties and unexpected occurrences which will occasionally arise even in the simplest operations.—*British Journal of Dental Science.*

ON BICHLORIDE OF METHYLENE.

BY C. SPENCE BATE, ESQ., F.R.S., L.D.S., &C.

In the report of the proceedings of the Odontological for December, p. 17, "Dental Journal" for January, is the following passage by Mr. Braine:—"Bichloride of methylene had not shown such good result as the gas." Both nitrous oxide and methylene have now been before the profession long enough to have their respective characteristics fairly appreciated. Either or both have respectively sufficient anæsthetic power to deserve the confidence of the most cautious; but I was certainly not prepared for the statement made by Mr. Braine that "methylene had not shown such good results as the gas." According to my experience with both I certainly prefer the methylene to the gas, and chiefly for this reason, that while under gas the pulse lowers considerably until sometimes it is almost lost; under methylene it increases, but not to an extent that raises any anxiety.

In speaking of the relative safety of anæsthetics, it must be remembered that those who practise in the provinces have not the advantage of a person like Mr. Braine, who wholly gives his attention to anæsthesia as a specialty. It is, therefore, highly important that the agent employed should be one that requires not that close and anxious attention that a rapidly lowering pulse demands. It is true that, although thousands of persons have been put under the influence of the gas, for the extraction of teeth, not a single death has occurred. This is a statement not to be overrated, yet there are numerous cases well known to the profession in which restoration has been most difficult; and artificial respiration has been frequently had recourse to.

Mr. Braine also remarks that "when children cry when the face-piece is applied they fall more rapidly under the influence of the gas, and the administration should be stopped short of complete insensibility, or symptoms of danger suddenly supervene." According to my experience

with children, there is but little risk with methylene. It was not long since a child, a boy about four years of age, was brought into my operating-room crying lustily. I did not time the operation by my watch, but I believe that I am correct when I say that the child was made insensible, two molar teeth were extracted, and he was awake again within thirty seconds.

At the Dental Dispensary in this town, with the assistance of Mr. Connell Whipple, when methylene was first introduced, I put off fifteen persons, extracted seven teeth during the hour or hour and a half that I attended, and all the patients walked away without the least disagreeable symptoms.

Since the methylene has been in use I have not had a case that could have given the most cautious operator the least cause for anxiety. Sickness is the only disagreeable accompaniment that I have seen, and that has generally been avoided when an appointment has been made beforehand, and the patient has been cautioned against taking a full meal immediately before the use of the anæsthetic.

In the use of the gas the livid and discolored appearance of the face itself precludes the operator from determining the exact condition of the patient, and necesssitates individual attention.

It is for these reasons that I have generally used methylene, and I certainly feel that my patient is freer from the small risk that accompanies anæsthesia while under its influence than when the gas is used.—*British Journal of Dental Science.*

BIBLIOGRAPHICAL NOTICE.

Rubencame and Barker's Illustrated Catalogue of Dental Materials, Instruments, &c., 825 Arch street, Philadelphia, 1871.—The above enterprising firm have just issued a very fine catalogue of 184 pages, and as they give it gratuitously, we suppose no one will "refuse to take it." These catalogues in themselves are really instructive, and it behooves dentists who wish to keep up with the times to consult them, and moreover, to encourage these advertising ventures, so suggestive of the progress and life of the profession, and the liberality of the firms who publish them. We frequently find the easiest way to show the inventive life of dentistry to our patients is simply to hand them such a catalogue to look over. What other profession can parallel them? In addition to the catalogue, Messrs. R. and B. have appended an invaluable compendium of dental recipes and instructions for treating diseases of the oral cavity, &c.

EDITORIAL.

MEETING OF THE DENTAL BOARD OF ONTARIO.

The Dental Board of this Province met in Toronto on the 17th inst. The usual business of granting licenses to five years men and the examination of students having been completed, the subject of amendments to the Dental Act was taken up.

It will be remembered that, at the meeting of the Association in June last, the following resolution was offered by Mr. Chittenden, seconded by Mr. Jones:—That a petition be presented to Parliament at its next session, praying for amendments to the Act respecting Dentistry, and that the President appoint a Committee to draw up such amendments; said Committee to report to this meeting before its final adjournment. Carried." It will also be remembered that the mover of the resolution stated that, as whatever amendments should be made to the Act would affect all the members of the profession alike, he would strongly urge that such changes as might be deemed advisable should be carefully considered at that meeting, while such a large number were present. The President appointed Messrs. Leggo, J. W. Elliott and Clements, who drew up such amendments as seemed advisable to them, and presented their report on the last evening of the session.

The late Secretary of the Board, Mr O'Donnell, objected in very strong terms to its being received, stating that he had prepared a series of changes in the Act, which he was intending to present to the Board, which would meet all requirements and be perfectly satisfactory to all; and after a good deal of loud talking on the part of several, it was decided that the report should not be received. The Board met in July following, and an attempt was made to decide upon the necessary amendments; but, after a lengthy discussion, it resulted in nothing, and the matter was allowed to stand over till the meeting in January. Thus the matter remained till a few weeks before the time for the meeting of the Board in January, when the President, and one or two others, drew up and had printed another series of amendments to be discussed at the meeting, to a great part of which, no one, we think, could take exceptions. The number of the members of all future Boards was reduced from twelve to seven, any four of whom were to form a quorum. The *time* for the *first meeting* of the new Boards was fixed, and the meetings of the Board were to be held annually, on the first Tuesday in March, instead of semi-annually, as at present. Section 18 was changed, so that instead

of its being in the power of a magistrate to fine a person practising without a license any sum he might please, not exceeding twenty dollars, he would be obliged to fine him not *less* than twenty nor more than fifty dollars and the cost of the prosecution. It was also proposed to imprison the delinquent in case of default, for not less than one nor more than two months for each offence. It is hardly possible to suppose that the latter clause would be entertained for a moment by the Legislature, as the whole tendency of modern legislation is in the opposite direction, and as our medical friends have not been able to get such a law passed, it is almost certain that we could not. Several sections were devoted to Dental Schools, by one of which it would be in the power of the Board to open as many schools or colleges as the members might see fit. So far as we have been able to learn, no attempt was made to send a copy of these amendments to the different dentists of the Province for their approval. It was, in our estimation, so exceedingly crude, that we feel certain that a large proportion of the licentiates would disapprove of it if it had been passed.

Dr Fulton, with the assistance of Mr. Callender, drew up a College scheme which we think would be perfectly satisfactory in most of its provisions. It would require to be trimmed down somewhat, but, even as it was, it was infinitely preferable to the one presented by the President.

It provides for one school only, and that to be located in Toronto, where, we think, it should be, as that is the metropolitan city of the Province; and if carried out honestly in the interests of the profession, would give us an institution of which we should all feel proud.

It was, however, after some discussion, thrown out by a majority of the Board, and the former one adopted, and carried to Dr. Boulton, M.P.P., the gentleman who has hitherto so kindly and successfully managed our affairs in the legislature, who declined to take the matter in hand, as he did not think that that was an expression of the wishes of the majority of dentists of the country, and, furthermore, advised that the subject be brought before the Association at its next meeting, where it should have been discussed in the first place. We are very thankful to Dr. Boulton for the course he took in the matter.

As we are nearly all agreed as to what is required in all respects, except the College question, we hope that each and all will look at the subject in all its bearings, between this and the meeting of the Associotien and be decided to give an opinion in the matter. This, we are convinced, will be the only subject about which there will be division of opinion. It is hardly possible to think that any one will be willing to

see the school carried on for another year in the loose manner that it has been for the last two years, and it would be far better to let it drop entirely than to have it carried on as it has been. We do not find a word of fault with the teaching department, for we are satisfied that the teachers have done their best under the circumstances; but, so long as there is no recognized head to the institution, it will be impossible to carry it on successfully.

C. S. C.

POOR NOVA SCOTIA.

We are deeply moved by recent news from Halifax, and now that the "Blue Noses" are part and parcel of ourselves, our interest in them has increased. But, alas! what has poor Nova Scotia done that she should continue to be afflicted with that little quintessence of quackery and rascality styled De Chevry, who, it appears by the *Acadian Recorder*, recently appeared in Halifax in a sleigh drawn by four white horses, and "lectured" a gaping crowd against the passage of a law in Nova Scotia incorporating the dental profession. Surely the most untutored legislator in the Nova Scotian Assembly will need no further argument in favor of a Dental Bill than De Chevry's last exploit; and we have sadly overestimated the intelligence of our "Blue Nose" legislators, if they do not comply with the appeal of Dr. Cogswell and other respectable practitioners, and pass a law which will rid their province of all such quacks, as effectually as St. Patrick cleared the snakes out of Ireland. We hardly think the incursions of the Yankee fishermen half as detrimental in the long run to the Nova Scotians, as the presence of that miserable little whelp, De Chevry, who has destroyed enough teeth in this city alone to build him a monument. We pity poor Nova Scotia, and will gladly sing out "Hurra!" when a Dental Bill is passed.

B.

THE VERY LAST TIME.

In the last number we enclosed bills to all those who have not yet paid their subscriptions for this volume, and we wish to give notice that this is *the very last time* we will dun. Those who do not value the journal sufficiently to comply with our terms,—and which are only the terms of all other dental journals—are not worth troubling about, and after this number we will positively not send it to a dentist in the country who does not choose to pay for it. We said before, that any having compunctions against paying in advance, might

at least write and say so. But we are heartily sick of dunning, and we feel that those who do pay, do not get equal justice when those who do not, receive the journal just as regularly.

B.

THANK YOU FOR NOTHING.

As we anticipate that this number will end our acquaintance with those subscribers who have graciously condescended to take the CANADA JOURNAL OF DENTAL SCIENCE out of their post office since its foundation, *and who have overlooked the trifling matter of their subscriptions*, we feel it incumbent on us to return them *very* heart-felt thanks for the encouragement bestowed. Their constant favorable reception of the Journal augurs well for dental literature in Canada.

We hope to be in a position next year to reward such munificence, by giving a sewing machine or a grand piano to each one of these generous souls who will take the next volume gratis, postage paid. Certainly, such support is worth bribing.

B.

KEEPING SPECIMENS.

Every dentist should zealously preserve any interesting specimens of abnormal dental development or disease which he may have the luck to obtain, and either form a private museum to which his *confreres* and patients could have access, or present them to the museum of his Association. For many years we have kept every case of exostosis, osseous union, necrosis, ossification of the pulp, peculiar growth, arrested development of the teeth, &c., and have found them very useful as instructors, both for ourselves and patients. The benefits to be derived from such a collection is incalculable, if a proper system of classification and arrangement is observed, and the data of each case affixed at once, when the circumstances connected with it are fresh in the memory. By aid of a microscope—which every dentist should possess and understand—the structure of these specimens may be examined, and an insight obtained which no other means can give. However perfect one's memory, or imagination, neither can be trusted to give any adequate idea of the hidden structure of these cases; and personal examination should never

be omitted for second-hand testimony or opinion. Too many cease to be students just when they ought to be most zealous, and forswear earnest study just when they most need it. Particularly in the diseases and abnormal growths coming under the observation of the dentist, do we find an easy satisfaction with what the text-books say, and not enough of that critical research and minute examination without which knowledge cannot be thorough. Some have no taste for such investigation. That is the very best reason why they should begin to cultivate the deficiency.

A great deal might be said in favour of this subject had we time to discuss it fully. There is one point of importance, however, which must not be forgotten. Too frequently many yield to the request or demand of patients and give up rare specimens which have been removed in their office, and seem to take it for granted that the patient is the legitimate possessor. In a legal point of view, possibly the patient has a claim to his own excrescences, but we think the dentist is as properly entitled to specimens of dental disease and developement, which cease to be of use to the patient, as the surgeon is to osseous tumours, stones from the bladder, and the various growths which form so interesting a collection in the surgeon's museum. Last week we saw a boxful of pins, stones, needles, bullets, buttons, &c., which one surgeon had removed during an extensive practice; and almost every physician keeps every rare specimen, or contributes it to a museum. It is, of course, understood that these specimens contribute to the study of our profession, and are not kept for any pecuniary or other selfish motive. In this way every dentist may accumulate a little museum of his own, or help to build up a general one, far more useful to him than collecting coins and postage stamps.

We trust these few desultory remarks may stimulate our readers to keep their specimens, and, moreover, to read up and investigate their various physiological and pathological associations.

B.

ILLUSTRATIONS.

Several illustrations are held over, waiting for the matter to accompany them. We have in preparation a full age portrait of Dr. A. Bernard, the oldest living dentist in the Dominion, which we will give in the May number.

NUNS AS DENTISTS. WHAT NEXT?

We are greatly surprised to learn, on the very best authority, that the nuns of several of the Convents on the Island of Montreal are in the habit of filling decayed teeth for the girls under their charge, and receiving fees for the same.

We were not before aware that this constituted a part of the duties of these estimable ladies, and we would most respectfully venture to point to the impropriety of meddling in a matter they do not understand. A number of the young boarders have had their teeth completely destroyed by this primitive dentistry, and we suspect that the parents of these young girls, who reside at a distance, and many of whom would spare no expense to have their teeth properly treated, will not have their confidence in convent life increased thereby.

The nuns are just as proficient, and ten thousand times more conscientious, than those dentists who make a specialty of low prices and bad work, and whose bad work may possibly have induced the nuns to try "their prentice hand;" but, while there are *respectable* French and English dentists in Montreal, there is every good reason why the whole care and treatment of the teeth should be left to regular practitioners.

We would also urge the propriety of discretion in the selection of dentists to attend the teeth of these young ladies. We are aware that some of them have fallen into the hands of the Philistines or "cheap dentists," who, of course, do them more harm than good. Between this class of dentistry and that now being introduced by some of the ladies of the convents, we predict some pretty specimens of workmanship, and, possibly, some few actions for damages.

B.

MISCELLANEOUS.

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PROFESSIONAL CACKLERS.—The following extract from the *Pacific Medical and Surgical Journal*, will apply to the chronic grumblers, disappointed "expositors," and other such nondescripts, found in the dental as well as the medical profession.

"There are some men in the profession who make a specialty of cackling. They cannot live in peace with their brethren; their nostrils are constantly penetrated with rank smells; they seldom unite with medical associations, for the reason that certain members are obnoxious to them. Should they join, their first act is to nose out some peccadillo of a fellow

member and raise a fracas. So full are they of the spirit of clique that they see, in all directions, cliques which have no existence but in their own brain. They declaim perpetually about enmities and discords, until they give the impression that the profession is a jumble of strife and faction. Should they ever make an honest attempt to correct an evil, they mar, instead of mending. Blind to the good qualities of others, they have a microscopic perception of faults. Wherever hey go, they carry an atmosphere of discord. One such individual will destroy the peace of a society or a neighborhood. He works by physical catalysis, poisoning all with whom he comes in contact, and leavening others into his own vicious nature. Every large city has one or more such pests in the profession. What they are good for we have never yet been able to perceive. That they were created for any good purpose does not appear, unless on the general principle that "nothing was made in vain."

NITROUS OXIDE IN GENERAL SURGERY.

A report of the administration of nitrous oxide gas for excision of the entire mamma is of special interest, inasmuch as it is the only one on record. Inhalation occurred at intervals for six minutes and fifty seconds; and the gas was shut off for one minute and fifty seconds. The operation was conducted in the usual manner, and from the first inhalation to the close of the last manipulation the entire time occupied was eight minutes and a half. The general appearance of the patient did not differ from that usually observed under the influence of anæsthetics, and her condition after the operation, she expressed as quite comfortable, and without assistance walked from the operating ward to her room. This is no doubt the fore-runner of many such attempts at employing the gas as a narcotic in other operations than those of a dental nature, but its success in cases requiring more time than the one above given may not be as satisfactory.—*Medical Independent.*

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ORIGINAL COMMUNICATIONS.

THE MANUFACTURE OF ARTIFICIAL TEETH.

Read before the Montreal Dental Society.

BY C. BREWSTER, L. D. S., MONTREAL.

In the manufacture of artificial teeth on this continent, there are so many firms competing, that the article manufactured, instead of improving, has rather deteriorated in the last few years. Whether it is the manufacturer's or the dentist's fault, I do not know, but there is one thing certain, viz: that cheapness! is the cry.

When the vendor of artificial teeth enters the dentist's office, praise though we may, ever so much, his wares, there is one thing above all others he keeps forcing on your attention, and that is how cheap these particular teeth are;—"Why I can sell you those teeth (gum teeth) for two dollars a full set." Such teeth! Save us and preserve us! I expect some day to have some teeth offered me made of borax. I believe there are some teeth that have got down to one dollar a set. I do not think they will go any lower, and sincerely hope not.

I had an old Scotch gentleman with me some time ago who smashed his set as fast as it was put into his mouth, and one day, with a doleful countenance, he asked me if I "could na fit sum'at into his mou' as'ud staun him." He had pulled off block after block, and what was I to do? I could make the pins hold in the rubber, but alas! I could not make them hold in the teeth. One day, searching amongst odds and ends, I came across a box of "ye ancient teeth," made, I think, gentlemen, before either you or I were born! "Old Alport." Few perhaps have ever heard the name, but here was a visible testimony of the old gentleman having once existed, and a goodly man he must have been in his day, for stout old teeth were these. To be sure the colours were rather peculiar, varying from a dark blue to a bright yellow, but perhaps our ancestors

did not brush their teeth much in those days, and decided colours were the fashion. I came to the conclusion to try "Old Alport," for the colour did not matter a straw, as my friend smoked all day long, and for all I know, perhaps half the night, and his teeth consequently as nearly approached a beautiful (?) coal black as could be. I put in a set of them and sent him off assuring him that he was all right now, but as I had told him that several times before, he shook his head doubtfully. A year or so after, I met the old gentleman in the street, when he exclaimed without preface, "Eh, mon, but they's the teeth. I can chaw onything wi' 'em, why did ye no' gi me these 'afore?" He is wearing them yet and will continue to do so for the rest of his natural life, and I believe he will never succeed in breaking one of them. So much for the manufacturer of the past generation! What have we to say for those of the present day? One day in looking over some old papers, I came across a pamphlet which bore the title "Catalogue of Dental Goods," sold by Messrs. Ash & Son, London, England. How it had come there I did not know, but upon looking through it I saw amongst other things, artificial teeth of all sorts and descriptions, certainly a little higher in price than we had been in the habit of paying on this side of the water. Suddenly an assertion on the part of the advertisers caught my attention, and the more I thought of it the more I was inclined to think there was something in it. "Artificial teeth that are not porous" was the sentence that attracted my notice. I exclaimed, "this thing must be looked into directly." Therefore, straight to London went a note, with the cash, to purchase a sample of these curiosities. I mention "with the cash" because it seems these Messrs. Ash & Son are pretty "uppish" about the sale of their goods and chattels, not even being satisfied with cash, on delivery, but must have it before. A comfortable way of doing business no doubt. On the arrival of these teeth, I proceeded to put them to the test, and a few of the results I will now give.

In order to test the quality of the porcelain of which these foreign teeth were made, I took one of them and ground a deep groove, right in the face of it; then I subjected this ground surface to a good polishing on the "buff" wheel on which was a mixture of emery and oil. The result was a beautiful bright polished surface, fully equal in every respect to the surface that had been ground off. In fact it was proved by experiment that these teeth of "Ash & Sons" could be ground all over the face of them, cutting them into any shape you wanted. Then all you had to do was to sand-paper them, put them on your polishing wheel, and lo, and behold! they were re-enameled as bright and beautiful as if they had just been taken from the furnace. The advertisers words were

proved true,—they were not porous! The porcelain of which they were composed was dense, solid and strong. I took one of the teeth manufactured on this continent, choosing from the best makers of these articles and subjected it to the same test, but I knew beforehand what would be the result, for on other occasions when I had been cornered for want of a certain shaped tooth I had been tempted to grind it into shape, the result was as you all know; the tooth was ruined. It was all very well as long as I kept the stone wet with nice clean water, but put it into the emery brush and suddenly your beautiful white tooth became covered with black spots, showing conclusively that the body you held in your hand was not a solid substance (as you might have imagined it to be) but only a piece of sponge capable even of absorbing water. I next took one of the best American teeth and fastened it firmly in a vice, putting some soft substance between it and the iron to prevent the vice from cracking it; then taking a pair of strong pliers I seized hold of one of the pins, gave a "tug," the result was a tooth split into two or three pieces, and the pin I held in my hand whole and perfect. I may remark that there was a scientific twist on the end of this pin which had been inserted into the tooth, but as the material of the tooth was not strong enough to hold it, the said "twist" was of no use. I then put "Ash & Son's" on trial, screwed it tight in the vice, seized the pin, gave a tug and—no result;—pulled again and continued pulling till at last I went staggering across the room. Something had given, was it Ash & Sons? No. There it was, smiling at me from the vice. It was the pin, gentlemen. I do not know whether there was a scientific twist or not at the end of it, as the tooth would not give me the chance to find out. Some day, perhaps, I will investigate it more thoroughly with the aid of a steel hammer.

I hope no one will accuse me of advertising the above named gentlemen, for I can assure them that I have not received anything either in the shape of fat bank notes or otherwise. I should suppose from never having seen their teeth before, that they do not care about this side of the water as a market; in fact from what I have seen of their teeth they would have to alter their shapes, etc., for this country. The teeth made in Europe are too large for this continent, and all I have seen have a peculiar curve inwards, which, though it does not matter materially when inserting them singly, (for as I previously remarked, you can grind them to any shape you like without damage) yet upon putting up a set they have an appearance that with the dentists of America condemns them at once.

In colours, shapes and general artistic appearance I do not think any part of the world can compete with our own manufacturers. Nothing

can excel their imitation of the natural gums, for instance; and in all other respects I would give them the palm excepting on two points; strength and that peculiar resemblance to bone, that in our manufactures is altogether wanting, but which I find even in some old teeth made in Paris a century ago.

Our teeth look what they are,—stone! but the others I speak of, look as though you could take and cut them with a knife, so perfect is their imitation of bone. In point of strength we are even behind the plate teeth made twelve years ago.

CLEAN HANDS.

BY C. S. CHITTENDEN, L.D.S., HAMILTON.

In no other calling in life is it as requisite that a person should have clean hands as it is on the part of the dentist. His operations being mostly in the mouth, it is of the utmost importance that his hands should be spotlessly clean, if he would secure the respect of his patients.

There are many persons who are notoriously filthy in every respect, except about that which enters their mouths, who look with the greatest disgust at the dirty hands of the dentist, and although they may not like to say anything at the time, they are pretty sure to avoid him the next time they require to have their teeth operated upon. In these degenerate times, when most of us are obliged to spend a large part of our time in the Laboratory, it is of importance that we should have at hand something that will remove the dirt and discolourations from the handling of flasks, lead, and moulding sand.

This subject was brought very forcibly home to us the other day while on a visit to a professional brother. We found him at work in the Laboratory with his hands, of course, very dirty. After a few minutes a lady called to consult him, when he went to the basin and attempted to clean his hands with soap and water, but as might be expected, the stains from the flask still remained. He attended to his patient, and after she was gone we remonstrated with him for going to the operating chair with his hands in such a state. He said he regretted very much being obliged to do so, but really he knew of no way by which he could avoid it. He had tried many things for removing the stains but could never find anything that would do it effectually. We told him what we have been in the habit of using for several years with perfect success, and as there may be many others troubled as our friend was, we will tell it to them. We first put as much soap on our hands as we usually do when washing them, and then take about a teaspoon-

ful of carbonate of soda (common baking soda) and rub the hands thoroughly *out* of the water till we think the stains and dirt have all been removed, when we wash them in water. A little perseverance will always accomplish its object. In cold weather, when there is danger of the hands chapping from the use of the soda, we mix enough glycerine with it to make it into a paste and use it in that way. Try it.

A CASE OF HÆMORRHAGE.

BY J. H. WEBSTER, L. D. S., MONTREAL.

A number of years ago, a patient of mine called in to see me, bleeding from the gums, having been treated without avail for three days by his physician, who could not stop the hæmorrhage. The blood oozed out slowly from around the neck of a *perfectly sound tooth*, which was neither decayed nor diseased. This was peculiar, and to me, a novel case. The gentleman was so weak that he could hardly stand. He came to me as a last resort, thinking as it was from the gums that it might be within my scope to stop the bleeding. I suggested as the only possible remedy, the *extraction of the tooth*, and afterwards plugging the socket; but I refused to do it unless his physician was present, as the condition he was then in did not seem to justify me in assuming any extra risk, without the presence of his medical attendant.

The next day he returned alone, not being able to get his physician. He had made every arrangement to die; the bleeding had continued all night. The physician advised him to submit to my proposal and he decided to do so. I concluded to take the risk rather than let him perish, and I must say that never in my practice did I feel so great a dread of consequences as on that occasion.

I extracted the tooth—a molar—and the blood spurted out in jets ominously. I immediately plugged tannin and gold foil into the socket—the best things I had at hand,—in ten minutes a clot was formed, and the bleeding had ceased. The blood evidently was arterial. I hardly know how to account for the spontaneous hæmorrhage. I question if any other means than those I adopted would have saved this gentleman's life.

TEETH AT BIRTH.

Read before the Montreal Dental Society.

BY W. GEO. BEERS, L.D.S.

A few months ago a child was born in Montreal with lower central incisors, and, having read of the anomaly in the city items of an evening

paper, I posted off to the "scene of the occurrence," as reporters say, and "interviewed" the happy parents, and the interesting addition to our population, and had the satisfaction of examining the case for myself. The mother, instead of thinking me rude, was quite proud of the interest evinced in her child, though not until I had assured her of my peaceable intentions, and my innocence of any desire to experiment on her bairn for the sake of science.

The teeth were to all appearances as perfect in shape as temporary incisors ever are, and abundantly supplied with good enamel. As might be expected, they were slightly loose, but had the feeling under the finger, and, from what could be determined by observing the gum opposite them, of having some attachment to the socket; and I felt assured that the fangs were formed, though not fully, and that the original fibrous septa had ossified and become sufficiently firm and high, to give comparative solidity to the teeth. I hardly supposed that the fangs were as *fully* formed as they would be at the normal period of eruption ;— that they had shared in the premature calcification and development of the crowns; because the cementum is the last tissue of the tooth formed. On the other hand, the question arose as to whether or not the calcification and growth of the whole tooth had not been facilitated by the early emergence of the crown through the gum ; and again, if it might not be possible that the premature eruption of the crown was actually caused by a premature calcification of the fang, as the eruption at the regular period is generally believed to be the consequence of the increasing size of the fang pressing the tooth upwards, and absorbing the gums. As a rule, the cellular tissue or gums of the child are firm, and of a cartalaginous consistence at time of birth, and the eruption of the teeth at the seventh month is attended with various slight and critical derangements, either a direct consequence of this normal physiological development, or connected with the irritation common about the time of protusion. Now, of course, there must be considerably greater resistance in the gums at the seventh month, than in embryo, and the counter pressure exerted upon the incompletely ossified pulp would excite a degree of irritation, which would be altogether absent and avoided in premature eruption ; and the sympathetic excitement of the emergence of the lower incisors, at the tenderest age, would be escaped by the child, to its advantage, I believe. Here, in the case I describe, the saccular stage had terminated and the eruptive had occurred when the child was in embryo, whereas, according to the normal period, the teeth should at this time have been in the saccular stage, and the eruptive should not have taken place until about the seventh month.

The mother was advised to have the two teeth extracted, as her breasts had suffered severely the first few days of suckling by the biting of the child, but I was allowed to contrive a simple cap of gutta-percha, underneath which was tied a bit of rubber tubing, and which was placed over the teeth, and held in the mother's hand while nursing. The sides of the cap rested on the vacant gum at the side of the teeth, and prevented any extra hard pressure on the teeth; while the rubber tubing, being elastic and hollow, bore easy on them, and perfectly protected the nipples from excoriation. There was no small difficulty at first in coaxing the child to suck with this contrivance on his teeth; but, by perseverance, and mild doses of starvation while the tempting breast was held within an inch of his nose, he was completely subdued. I sent the mother half-a-dozen of the caps, as the youngster had bent up the sides of the gutta-percha, which rested on the gum, and had nearly bitten clear through the tubing of the original—an indication of the probable suffering which would have been entailed upon the mother, had it not been for the protection provided.

The teeth are now perfectly firm in the sockets, have become as long as they ever will be, and the two upper centrals have emerged through the gum. The mother continues to use the cap, and intends doing so until the child is weaned.

This is the second case of teeth at birth I have met with in Montreal; the first being one left lower incisor; the child died in convulsions the fifth day, and was told that the early dental development originated the convulsions. This, however, seems very unsound, as they did not commence until the end of the fourth day, and there was no inflammation or symptoms present to indicate sufficient irritation to have caused such a result.

Some very interesting references to teeth at birth may be found in the pages of history, ancient and modern, for which I am indebted more to the researches of others than my own; though it is to be regretted that comparatively no physiological investigation at all, or high authoritative opinion on this subject can be found, beyond a few paragraphs in old authors.

Pliny cites the case of Marcus Curius, consul of the Roman Republic, who is reported to have had a full set of teeth at birth, and was therefore called Dentatus; the cases of Papyrius and Valeria, born with full sets, are also mentioned by Pliny. Zoroaster, the Persian legislator, is said to have had all his teeth at birth. These extraordinary cases may be received with liberal grains of allowance, as, while we can understand the possibility of the early protrusion of one or two teeth, which ought

to come at the seventh month, it seems very difficult to understand the development of the "complete set," which ought, normally, not to appear in full until after the second year.

Instances of birth with one or two teeth are more frequent and reliable: Louis XVI. had two, and so had his secretary, Cardinal Mazain; also Richard III. and Mirabeau. Many German—excuse me, Prussian—and French writers have reported cases of one or more teeth at birth—several being the two and four canines. Polydorus Virgilius reports of a child born with six teeth; Jones reports a case in the lower jaw, of two teeth which he removed, and the fangs of which were not more than one-third developed. In several instances the teeth were very imperfect; in others, they dropped out; the children were emaciated, and suffering from hereditary syphilis. In many cases, however, the congenital teeth were good, and were retained in place. Several cases are reported where, after extraction of these teeth, new ones replaced them shortly after or at the regular period. This is another suspicious assertion, and it is highly probable that the eruption of the laterals were supposed to be the reproduced centrals. One child, a Spanish dwarf, is said to have had all his teeth at birth—none of which he ever lost—got a beard in his seventh year, and had a son in his tenth.

One eminent European professor maintains that congenital teeth are not genuine teeth, and will be reproduced if drawn. His statements, however, are in the main merely hypothetical, and do not agree with present experience of these anomalies. It would seem reasonable to suppose that the same arguments in favour of retaining temporary teeth of normal eruption, would hold good in the case of these early developments; the alveolar processes and jaw are even easier injured at this active stage of their growth, than later in childhood; irregularity of the teeth would more likely ensue, and all the natural processes of development more likely be disturbed. I should be disposed to try every means to retain these teeth.

The conditions on which their early development depend, have not as yet been ascertained: one early writer associated it with protracted pregnancy, but gave no reason whatever for his conclusions. It is, however, easy to understand, that it is purely an abnormal physiological process, hastened, possibly, by hyper-excitement of development of the dental tissues and adjacent structures, at a time when the gums are soft and offer little resistance to the eruption of the teeth.

THE PYROXYLINE BASE.

BY W. C. ADAMS, L.D.S. TORONTO.

I find the pyroxyline base to be a success, and so have others. By working the plate up to what is required, and securing as much as is needed on each tooth, according to directions, and then while the last coat is yet soft, cut pieces of the plate with the edges filed thin and softened by the liquid, and put them on and press them for a little while with a warm spatula, and they will adhere, and thus give a ready polish and beauty to the plate, finishing up around the teeth (if there is enough) as though they grew there. If need be for strength line the inside with a light plate or additional thickness.

AMALGAM FOR FILLING TEETH.

[The *Canada Medical Journal* having refused me the privilege of replying through its columns to the last article of Mr. Bowker on amalgam, I am compelled to insert it here.

It will be remembered that Mr. B. commenced the discussion; that he published in the *C. M. J.* false statements, defaming to the reputation of our Canadian Dental Societies, and those of his confrères who used amalgam ever so discriminately. My refutation of his charges was inserted in the *C. M. J.* Mr. Bowker was permitted to publish another tissue of false statements and personalities, which the accompanying reply was written to refute. This reply was refused insertion, although the editor never saw its contents. The reason given me personally for this remarkable rejection was that "some of the subscribers of the *C. M. J.* had complained of their medical journal giving so much space to a dental question, and that the publisher and he had determined to stop the correspondence."

I should like the *Canada Medical Journal* to explain how it can venture to evade the common law of controversy, which invariably gives the negative the privilege of reply, and which law is an accepted one with all liberal periodicals.

I do not suppose that the *C. M. J.* intends the venture of inaugurating a new law of controversy. If so, it should condescend to announce its intention before putting it into practice.

I leave the justice of the matter to my readers. It is a satisfaction, however, to know that every medical journal and every reliable authority whose opinion has been consulted on this particular point, agree with me, that the editor of *C. M. J.* ventured to stop the correspondence at the wrong end; and that by common courtesy, if nothing more binding, I was entitled to the privilege of a reply.—W. A. Beers.]

AMALGAM FOR FILLING TEETH.

BY W. GEO. BEERS, L.D.S., MONTREAL.

The revival of the venerable views on amalgam, and the specious but fallacious arguments adduced against it, which any one can read almost *verbatim* in old numbers of the *American Journal of Dental Science*, is to me like turning over the leaves of a dusty folio, which has been laid aside for half a century, and finding between two of the pages a dead, dry fly—a veritable blue-bottle. Mr. BOWKER "rings out the same old changes," and harps on the same effete strain as did his dogmatic masters of thirty years ago. To the dental profession the question is a trite and worn-out theme. Common sense and superior intelligence have almost unanimously ignored the prejudiced tirade against amalgam *per se;* dispassionate investigation and discussion have removed the unreasonable opposition to its discriminate use, except from the minds of one solitary individual in Canada, and a "corporal's guard" in the United States: and it must be remembered that there are always a few men in every profession, who assume a superior intelligence to the rest of their colleagues, but whose professional history, with rare exceptions, does not generally present any proofs of their great superiority, other than what they themselves assume. Thirty years ago there were probably two hundred dead opponents of amalgam, when there were not over 1,000 dentists on the continent, and they poorly educated; to-day, though there are probably 30,000 dentists—hundreds of them having had the benefit of collegiate education—yet there is only one in Canada, and a few in the States, who hold the extreme views expressed in Mr. B's. article. Mr. B., would therefore, have us infer that the dental profession has actually retrograded; that the intelligence of those who recanted their old views is not so great to-day as it was thirty years ago; that thirty years' college and associative reform has done nothing for its intelligence! It would occupy an entire number of the *Journal* to give even a bare epitome of the bitter "Amalgam Controversy" of 1842-45, the vulgar personalities it engendered, the defamation it produced — which Mr. B. seems to have imitated in regard to our Canadian Dental Societies—and the injurious tendency of the affair on the progress of the dental profession. To re-discuss the whole subject of amalgam would, I am sure, be an unnecessary concession to an opponent who cannot offer one original argument, and who has to resort to arguments which have long ago been refuted, and which the enlightenment of the profession utterly ignores. However, I have no objections to lay bare a few of Mr. B's misstatements, and I beg a careful reading from even the most prejudiced.

I was prepared for the array of quotations from the minutes of defunct

societies, old dental periodicals, *et cetera*, to which my opponent is at last reduced, and which he now submits as *fresh testimony* (!) against the use of amalgam. I will take it for granted that Mr. B. has never used amalgam, as it will more conveniently allow me to dispose of his arguments. His *dernier resort* is precisely what I wanted, to show that not only has he made rash statements in reference to the views still held by some of the strong anti-amalgamites of 1845, but that *his* views of amalgam have not kept pace with the dispassionate investigation and intelligence of the times, which has led almost all of the old opponents who are living to so modify their practice as to use the filling.

I freely confess to a great want of respect for old authorities in dentistry, and should be as much disposed to regulate my practice by what was gospel in 1845, as to follow the vagaries of Celsus, or pin faith to the chemical speculations of the 16th century. My opponent appeals with deference to old writers, who enunciated principles and practices when the science of dentistry was at its dawn, and much of whose assertions are mere theory, easily disproved by first year students, and who are more cherished for what they did in smoothening the way to progress than for any positive authority they now possess.

And yet we do find dentists in practice who continue to destroy all exposed pulps; to extract all teeth affected with chronic periodontitis; to treat hyper-sensitiveness of dentine with arsenic; to cram arsenic around the neck of roots of teeth, in order to cause absorption of the alveolus, previous to attempting their extraction; to use the old key of Garengeot almost exclusively; and to follow many other antediluvian principles, simply because Harris or Mrs. Grundy so advised, and because they have not the independance to think for themselves, or the liberality to concede to others who differ with them the barest possibility of being in the right. They make dentistry a science of speculations rather than a science of facts, and are as tenacious, not only of their views on amalgam, but on every other dental question, as if there was concentrated in their brains an incarnation of sagacity, equal to that of the seven sages of Greece stewed down together in Æson's chaldron. The one distilled drop of otto of roses from a million blossoms is not a circumstance to them.

As I showed in my first article, Dr. PARMLY used precisely the same arguments thirty years ago as Mr. B. endeavoured to startle the readers of the C. M. J. with as original, and neither Mr. B. nor any one else has ever been able to add one whit; excepting the proportions of amalgam as given by my opponent—64 parts of mercury to 36 of silver—which are, I will admit, "purely original: his figures, however, remind me of the story of the weaver, who added the year of our Lord at the top of

his page to the amount of his profits, and who got astray in the small item of of $1860. On the 19th July, 1842, Dr. PARMLY wrote: "I *once* prepared some amalgam, and filled *a dead tooth* with it for Mr. N., of New York, and he is the only person in the world that can exhibit a tooth ever touched by me with it; *having proved* its deleterious effects I uniformly condemn it, and have condemned it for many years." Now here the great anti-amalgamite exposes a specimen of the scientific reasoning indulged in on amalgam. He admits he only used it once, and in a *dead* tooth, (and yet saved that tooth,) and then, with characteristic logic, concludes that he proved its deleterious effects from mere theory and this one case. Mr. BOWKER, however, does not need even to test the material for himself. He has the opinions of authors, such as HARRIS and PIGGOTT, who participated in the amalgam war of 1842, and who cannot conveniently recant, because they are dead; the opinions of Dr. PARMLY, who has not been in the practice of dentistry for over twelve years, and who does not now presume to offer himself as an authority; he has old volumes of the *American Journal of Dental Science*, which are as dear to him as the Koran to the Mahometan; he has resolutions against amalgam of *old* societies passed during the Amalgam war, which certainly cannot repeal them, because the constant bickering ruined their usefulness, and they have been defunct for two decades; he has *old* opinions of eminent dentists; but the peculiarity about it is that the *American Journal of Dental Science* of to-day rejects the dictum of the *American Journal of Dental Science* of 1842, and the eminent dentists whom Mr. B. quotes as having said such hard things against amalgam in 1842, have recanted those hard words, and now use "the poison!"—"So much for" Mr. H. M. BOWKER.

I must reiterate the regret expressed in my first article, that my opponent found it necessary in relieving his mind of his opinions on a scientific question, to impute "ignorance, want of skill, and dishonesty," pointedly to our Canadian Dental Associations, and to all who were not exactly of his opinion; and to assert, with that innate modesty which characterizes all great men, that as all the dentists in Canada, except himself, used amalgam, therefore he was the only skilful and honest one left in the Dominion! With such contributions to the polite literature of the dental profession I shall not attempt to compete. But this assertion compels me again to remove the impression his articles were intended to convey, viz.: that amalgam is *par excellence* used indiscriminately by those who use it at all, and that those who use it with discrimination are equivalent to those who use nothing else. He also endeavours, in true 1842 fashion, to make his readers believe, that because I defend the

use of amalgam at all, I defend its exclusive use by quacks. Very gentlemanly, indeed.

Every honest dentist accepts the very simple proposition, which is not at all original with Mr. B., but was made and accepted before he was born, or dentistry was a regular profession—that gold is decidedly the best material for the teeth in every case where it can be used. I mean used so as to preserve the tooth and not so as to fall out in a few weeks or even years; used so that the fact of gold being in the tooth is unmistakable, while the fact that the decay has not been half removed or the filling not properly condensed against the parieties of the cavity, is unmistakable too. It is rather trite to present the fact that the principle of every honest dentist—assuming that the public really believe there are other honest dentists in Canada besides my modest opponent—is to use gold for filling teeth as much as possible; and also that the principle of those who use amalgam, is to use it mostly in teeth which my opponent admits he would extract.

Mr. B. extols tin-foil in lieu of gold, and does not seem to think that galvanic action can be excited in the mouth with gold and tin as well as with gold and silver! I never yet saw a tooth that could be well filled with tin, but that could be better filled with gold. I have seen fillings of tin quite as discoloured as bad uncleansed amalgams. Circumstances occur where a soft filling is an absolute necessity, unless the tooth is extracted. The principal consideration in favor of tin over gold is the one Mr. B. seems to despise in amalgam, viz., cheapness. There is no medicinal virtue in gold-foil. To be of use at all it must be thoroughly consolidated, and classes and conditions of decayed teeth exist which are too frail to bear this requisite consolidation, and yet which with a filling easily introduced can be made useful for mastication for life. Now, no honest dentist would use amalgam in a front tooth, for the simple reason that a front tooth is more exposed; and the most precious, most orthodox filling is demanded. Amalgam in some mouths will discolour on the surface but in the large majority of cases where a good amalgam is properly inserted, it does not discolour. It is more liable to discolour in approximal cavities, because the tooth-brush cannot reach these points. However, several of the preparations of gold, such as sponge gold, &c., much used by some dentists, will become as black as ink on the surface. Under no circumstances would I prefer to insert tin-foil in a front tooth; gold can be just as easily inserted in every case.

The opponents of amalgam meet with frail cavities which they cannot fill with either gold or tin-foil, and they either extract the tooth or fill it with a preparation of gutta percha and silex; or another compound called

oxy-chloride of zinc,—a preparation of refined borax, quartz, French white zinc, which is calcined; and to the frit formed, calcined zinc is added, and the mixture made by forming a paste with a solution of dry salt, chloride zinc and water. Neither of these can make permanent fillings, and I have seen many cases where teeth were plastered up with these destructible articles, and deluded the patient into the belief that they were securely filled, when the edges were breaking away, decay creeping in, and destruction ensured, where good amalgam would have saved them. Take very large cavities in the molars; the labial and posterior sides broken away. To fill these properly with gold would necessitate an expenditure of time and material which few people in Canada, at present, appreciate sufficiently to pay for. And here I would say that in one family of four children, in Montreal, well known to Mr. B., I inserted 56 fillings—none amalgam,—all of which, with the exception of 8, had been filled with gold, and oxy-chloride of zinc, by an anti-amalgamite who considers himself something superior, about two years before they came into my hands. In the teeth of one young man, well known to Mr. B., I replaced 10 gold fillings which had been inserted by the same dentist as the above case, about eighteen months before. Now, if a dentist inserts such gold fillings, and charges the highest price, surely he had better have let them alone, and surely amalgam would be better for *him*, at least, to use.

There are a class of dentists who have a class of custom among the poor. If they fill the teeth of the poor with any other soft filling than amalgam, they deceive the patient as to the permanency of the filling; if they use gold or tin exclusively, neither the cost of the former nor the labor of either can be remunerated. And what then? Either the dentist must starve, or the teeth of the poor must be consigned to Mr. B's. scientific way of escaping an impediment, viz., extraction.

I wish emphatically to remark, that I do not and did not defend amalgam *in toto*. There is not an honest dentist in the land but denounces its indiscriminate use, and will rejoice when some non-metallic soft filling as good can be discovered to replace it. I perfectly agree that there is too much used, just as most of physicians agree that there is too much medicine used. But there are poorly qualified dentists as well as physicians, and you cannot regulate the practice of either in the respective particulars. The *abuse* of a medicine is no argument at all for its abolition, or what would be left of the pharmacopœia? Our Canadian dental societies were organized for the express purpose of elevating poorly qualified dentists to the highest standard they are capable of attaining, but Mr. B. consistently ignores their usefulness and defames their reputation in the Canada Medical Journal. Can he divine

a better way to change any malpractice or mistaken practice than by giving them gratuitous instruction and clinical education? Any dentist can show from the work of "cheap dentists" and some who esteem themselves superior, such abominable specimens of gold fillings as to lead many to condemn gold for filling. Mr. B. is satisfied to look at the bad operations or failures of others with amalgam. Has he no perception for the like in gold? and do all gold fillings preserve the teeth? This dodge of classing those who use amalgam occasionally, with those who use it exclusively is worn out.

A question arises here which it may be as well to dispose of. Can Mr. B., be so ignorant of the proportions of amalgam as to believe what he absurdly asserted in his first article—"When the mixture is subjected to the highest pressure in order to remove the free mercury, the amalgam then contains a preparation of 64 parts of mercury to 36 parts of silver?" What physician believing such to be the case, but would condemn amalgam, as it would never harden in the tooth, and would certainly be swallowed. If Mr. B. is not ignorant of the absurdity of these figures, what were his motives in publishing such a statement, associated as it was with the other assertion that nearly all the dentists in the Dominion *except himself*, used it?

I consider it my business as a dentist to regard the preservation of even a single tooth, in the most of cases, as highly as a physician would a human life. The very end and essence, the *summum bonum* of the honest dentist is to save the human teeth, and conservative dentistry is far above the mere mechanical. Any quack may extract a tooth; every one cannot fill it, even with amalgam, so as to preserve it. Mr. B. admits with bucolic innocence, that there are teeth which cannot be filled permanently with anything *he* now uses in his practice,—for it is a fact that other *sof* fillings than amalgam are not permanent—and that rather than fill a tooth with amalgam he would extract it! There is dental science for you with a vengeance! And from "the expositor of the abuses of dentistry" too! Now according to this scientific admission, my opponent must have extracted hundreds of teeth, because he would not use amalgam, when thousands of proofs exist everywhere in this very city, and many proofs in the teeth of physicians and their families of Montreal, that amalgam has healthily preserved teeth from further decay, which would have been consigned to Mr. B's. forceps.

Like nearly all opponents of amalgam, he presumes to speak *ex cathedra* on a point of practice which he "conscientiously affirms" he has never tried! He offers his theoretical knowledge against the practical experience

of the thousands of other dentists who are teachers in colleges, eminent operators, leading writers of the present day, not of 1842; many of whom are also medical graduates, and who are the acknowledged head of the profession in America and Europe. I should like my opponent to explain the qualifications he possesses to justify him in this assumption. Is he not like the critics who judge a book from the title page, and who, be it marked, are invariably the most dogmatic and intolerant critics of all? Which testimony in the use of a medicine would be most worthy of confidence,—that of the comparatively obscure man who avows his opinions to be due to second-hand text books, back numbers of old periodicals, old opinions of writers, which they recanted, and resolutions of defunct societies, or that of the men who have the lead in every progressive dental movement, who are the acknowledged leaders in this most progressive period of dentistry, who, with one or two exceptions, repudiate the assertions of the former? Mr. B. would positively have the world believe that mere opinions formed thirty years ago are more reliable than as many years practical observation and experience!

There are points and paragraphs in Mr B.'s last article which I cannot quietly pass over—they are too tempting to omit. He labors hard for arguments, and gives as his reason for accusing the "Royal College of Dental Surgeons of Ontario" of encouraging the use of amalgam, that "in the *Canada Journal of Dental Science*," vol. 1. page 210, are to be found questions put to the students on amalgam, in the said College. The wrong use of the plural instead of the singular number does not seem to rub against the grain of his conscience whenever it can make an argument appear stronger. There were not "questions" asked. There was only the one question asked. "What is an amalgam," and this not by the examiner on Operative Dentistry whose office is to "encourage" the proper materials for filling teeth, but by the examiner on Chemistry, whose office is to treat his questions from a purely chemical point of view. But what has he to say about his false charge against the Dental Association of this province? Nothing more than that as I was Secretary of the Association at the time, and because I edited the *Dental Journal*, therefore the Society of which I was Secretary "advocated and vindicated the use of amalgam!" Very logical, indeed. Very original logic. Peculiar to Mr. H. M. B. And yet, Mr. B. conveniently overlooks the important fact that the only reason I wrote on amalgam was to disprove *his* false accusations, and that *he had published* the false accusations in the *Canada Medical Journal* before I wrote a line on the subject. "So much for" Mr. H. M. B. How monotonous it is for some men to tell the truth!

He also says "the American Journal of Dental Science" has always in

its articles on the subject taken a most decided and *uncompromising* stand against the use of amalgam," and yet in the second paragraph of his article, he says that the present editor of the *Journal* "thinks I have taken an extreme view, and believes that amalgam *can be safely used* in teeth which are mere shells." He mentions HARRIS, WESTCOTT, DWINELLE, S. BROWN, PIGGOTT and PARMLY, all of whom he says, "repudiated the use of amalgam, and *those of them now living remain unchanged* in their opinions on this question." Well, HARRIS, BROWN and PIGGOTT are dead; DWINELLE refuses to discuss the subject; PARMLY is no longer in practice, and WESTCOTT, who is still a leading man in dentistry and who was actually the brightest man of them all, has recanted his old opinions. The "*American Journal of Dental Science*" in reviewing Mr. B's. first article said as follows:

"This article is somewhat severe upon the "Royal College of Dental Surgeons," and the Dental Societies of Canada. *Who Mr. Bowker is we do not know*; perhaps the "*Canada Journal of Dental Science*" can enlighten us; but whether Mr. B. is qualified by professional *experience* and *investigation* to make a report upon this subject or not, much that he says is true, but at the same time we think that he has taken an extreme view of the case.

"Although no advocate for the indiscriminate use of amalgam and believing that tin-foil is much superior as a *cheap* material for filling teeth, yet we think this compound may be used in teeth which are mere shells, so far gone that no other metal can be safely introduced, and that it will preserve such teeth for a time at least, especially where their extraction is contra-indicated for some good reason.

"On the other hand such fillings should never be used in teeth which it is possible to fill with either gold or tin-foil; and in no case should amalgam be used in front teeth, or in the pulp cavities of teeth, or in the proximity of a living pulp.

"When properly prepared and properly introduced, instead of amalgam fillings containing 64 parts of mercury to 36 of silver, as Mr. B. asserts, the proportion of mercury need not and should not be half so great.

The objections urged against this compound in Mr. B's. article would certainly hold good, *if the amalgam used at the present time was as impure as that employed* ten or twelve years ago. But a great improvement has been made not alone as regards the purity of the ingredients composing amalgam, but also as to the manner of preparing and introducing it into the teeth.

"The following is the best method for using this material in cases where its use is indicated." Then follows the detailed description of the

" method of use. Now I ask any one of common sense if that is the uncompromising condemnation " of amalgam Mr. B. would make his readers believe the American Journal of Dental Science still maintains. This extract is from the pen of *the present editor* of the A. J. D. S.,—Prof. GORGAS, who is also Professor of Dental Surgery and Dean of the oldest Dental College in the world, that of Baltimore. Knowing Mr. BOWKER'S high appreciation of the A. J. D. S., and all connected with it, I wrote to Prof. GORGAS and received the following answers to questions, Dec. 2, 1870.

Question—Do you not believe that amalgam will preserve a healthy tooth?"

Answer (by Professor GORGAS.)—" I do, if it is properly inserted into a properly prepared cavity."

Question.—" Do you think it better to extract a tooth, as Mr. BOWKER says he would do, rather than fill it with amalgam."

Answer (by Professor GORGAS.)—" I should prefer having a tooth filled with amalgam, to having it extracted, and would so advise my patients."—" So much for" Mr. H. M. BOWKER.

Dr. WESTCOTT'S writings and sayings seem to have great weight with Mr. B., who says, " Dr. WESTCOTT, *an authority*—he having filled the Professorial Chairs of Operative and Mechanical Dentistry, in the Dental Colleges of Baltimore and New York—is one of *the original and most indefatigable writers against* all preparations of mercury for filling teeth. What does he say? His utterances are not uncertain; what language can be more decisive? He, in the most emphatic manner, says, " No man who has so little self-respect as to use this amalgam *to any considerable extent* will refuse to stoop to any species of quackery which will contribute to his pockets," &c. Precisely so say I; and every honest dentist joins in condemnation of the men who use amalgam to such a considerable extent as to seldom use anything else. Dr. WESTCOTT was once an editor of the *A. J. D. S.* He is a great authority on amalgam, Mr. B. tells us, and the latter quotes what he said twenty-five years ago; a quarter of a century does not enlighten one according to Mr. B.'s theory. I trust, however, his weak nerves will survive the following little shock, and that Dr. WESTCOTT will continue to hold a place in his memory. Mr. B.'s " authority," like all sensible and unprejudiced men, has the manliness to acknowledge his erroneous views on amalgam, and is now using " the poison." He was the Secretary of the " American Society of Dental Surgeons," which passed the resolution against amalgam, and his name is appended to that resolution with Dr.

PARMLY'S; and so zealous a seconder was he of the bitterness of the latter that he was named his "*fidus Achates.*"

"*Syracuse, Jan.* 16, 1871.

Mr. W. GEO. BEERS—

Dear Sir,

I am in receipt of your letter upon the subject of the use of amalgam. I would have replied more promptly could I have found time to write you as fully as the subject demanded; for having somewhat *modified my views and practice* within the last fifteen or twenty years upon the subject, I hardly liked to give you the views I now entertain without giving you fully my reasons for such modification, and the restraints and limits I still hold in reference to their employment. Should I get time to do so, I will at some future time write out my views fully upon this subject, stating when, and only when, how, and only how, I use amalgam for filling a tooth.

Very truly yours,

A. WESTCOTT.

May I not return the salutation of my opponent, and say "So much for"—Mr. H. M. BOWKER.

In another place my opponent says, two leading Ontario dentists—one the co-editor of the *C. J. D. S.*—"agree in the main with me as to the use of A." Well, it seems necessary to reiterate that every honest dentist agrees that the indiscriminate use of amalgam is wrong, and that the use of *Mr. Bowker's amalgam proportions* is not only wrong, but worse. But how hard up my opponent must be for arguments, when he has to quote such a statement of dentists *who actually use amalgam.*

He courteously says, I do not tell the truth in saying that the "American Society of Dental Surgeons" did not *unanimously* carry the resolution of 1845 condemning amalgam. The facts are these (my readers can interpret them as they please): sixty-one members voted dead against the resolution when it was first brought up, and after these sixty-one had either resigned, or were expelled for non-compliance with the rash and silly movement, the remainder then "unanimously" (!) carried their own resolution. Mr. B. also denies that this resolution was finally rescinded: here is my authority for saying that it was. At a special meeting of the Society, held in Baltimore, 25th March, 1850, Drs. WESTCOTT, TOWNSEND, and I. H. FOSTER were appointed a Committee to report on the propriety of rescinding the amalgam pledge. At Saratoga, in August, 1850 (the following appears in the *New York Dental Recorder*, vol. 5, page 69): "The Committee appointed at the called meeting in Baltimore to consider the propriety of rescinding the amalgam

pledge, reported through their chairman, Dr. E. TOWNSEND, which report, after considerable discussion and recommittal for the purpose of amendment, was finally adopted, and the following resolution along with it:—

"*Resolved*—That the several resolutions adopted by the "Society of Dental Surgeons," at the annual meetings held 1845-46, having the effect of enforcing subscription to the protest and pledge against the use of amalgams and mineral paste fillings for teeth, be, and the same are, hereby rescinded and repealed."

Common sense has also repealed it: science peremptorily repeals such rubbish in her onward march.

Mr. B. cites resolutions passed in the dark ages of dentistry by the "Virginian Society of Surgeon Dentists" and the "Mississippi Valley Association of Dental Surgeons." Pray, who were they? and where are they now? "Down among the dead men."

My over-anxious opponent asks, "Is the Canadian Dental College prepared to say that the members of their kindred colleges in the United States are ignorant empirics?" That will not do, Mr. B. The Dental Colleges of the United States, as their reports show, do use amalgam, though discriminately; the Canadian College has not used it as it has happened; therefore Mr. BOWKER alone is the one who charges "the members of their kindred colleges in the United States with being ignorant empirics."

During a recent trip through the United States I met most of the very leading men in the dental colleges, associations, the journals, &c., and had especial opportunity of finding out the facts as to the use of amalgam. I found one bitter old gentlemen who vented forth the ancient refrain against its use; but I also discovered that he never tried to save exposed pulps of teeth, and that in the great improvements in practice he had no faith or share. All unanimously advocate discrimination in its use; use of gold in preference wherever it can be used; but the old theories I found entirely exploded, and yet the very proper precaution prevailed not to extol it, lest it should lead to over-estimation. Professor ATKINSON, of New York—a very giant among giants in dentistry, whose excellence in operating, keen diagnostic and general scientific attainments none can fairly dispute, and who frequently receives $50 and $100 for a single gold filling, and who, therefore, has every reason, were he selfish, to denounce amalgam—writes to me lately the following replies to questions:—

1. "Will not a properly prepared amalgam, properly inserted, preserve a healthy tooth?" *Answer, by Professor A.*—"Yes, as well as any other filling."

2. "Do you believe there is any possibility of ptyalism from amalgam in the teeth?" *Answer, by Professor A.*—"Nay, verily."

3. "Is amalgam not used by very eminent dentists for patients who cannot pay for gold, and for certain classes and conditions of decayed teeth which cannot be well filled with gold?" *Answer, by Professor A.*—"Yes, and by those of deserved eminence."

I can produce any quantity of such testimony from mostly all the leading dentists: one more will suffice for the present: it is from one of the keenest observers and rising men of the profession, Dr. S. P. CUTLER, Professor of Chemistry, Metallurgy, Microscopy, and Histology in the New Orleans Dental College. He says, "Undoubtedly I do think amalgam may not only be used, but with most decided benefit in a great many instances; where gold cannot be used I would use amalgam for permanent use. I have had several discussions with Dr. GEO. WATT on the subject of amalgam, and I always differed with him; his conclusions were not at all satisfactory to me. I have used amalgam for 25 years quite extensively, and never in any instance have I seen a single well-marked case of disease, either local or general, from its use in my own hands, or in any others. I have seen cases that have been attributed to its use, but without satisfactory evidence. I believe that good amalgam fillings in *badly decayed teeth*, thoroughly introduced and well finished after hardening, to be superior to any other filling, and will preserve such teeth much longer than gold or anything else, especially in back teeth. There are various reasons for the conclusions well-founded."

A dealer in dental materials in Ontario tells me that he has sold amalgam to nearly every dentist in Canada, though there are some dentists who deal elsewhere; he "sells to the best as well as the poorest. My sales in Canada amount to about 500 ounces per year." The largest dental depot in the world writes to me, Dec. 2, 1870: "We do sell amalgam to many of the leading practitioners in the United States; it is very extensively used by some of the profession, who, as contributors or editors of dental journals, professors in dental colleges, &c., are regarded as eminent dentists. Our sales amount to between 5,000 and 10,000 ounces per year." And it must be remembered that there are perhaps a score of dental depots in the United States.

Some of the leading dentists in the United States have recently introduced amalgams of their own composition to the profession.

The Dental Journals contain advertisements of amalgam recommended by leading dentists; and if the *Canada Dental Journal* does advertise amalgam, it is only what is what done by every other similar journal in the world, and Mr. B. must be very simple if he thinks a

publisher would refuse any proper advertisement. He has raked up all the petty little things he can think of to strengthen his case, but they have only served to weaken it. He twists a quotation around and endeavours to make it appear that the words of another whom I quoted, are original with me, and says "As long as I have been a member of the profession, I was not aware that pure gold would become highly oxydized when used as plugs in the teeth, or would have any medicinal effects on the constitution," Who said it would? Neither I nor the writer whom I quoted. My quotation said, "With equal propriety it *might be urged* against gold, that, *because when highly oxydized* it becomes a powerful medicinal agent, therefore it should not be used as a filling for teeth." This was in connection with a refutation of the assumption that because there is mercury in amalgam, it must necessarily have a mercuralizing influence. Mr. B. has something now to learn about gold as well as silver, if he is not aware that gold can become oxydized; and that it can produce medicinal effects on the constitution. Is not the ter-chloride of gold a powerful irritant poison? And Mr. B. is not aware that there can be produced an oxide of gold! Did he never know that a preparation of gold muriate or chloride of gold has been used as an antisyphilitic, in obstinate scrofulous and cancerous glandular enlargements, exostoses, &c., and that it is rubbed on the tongue or gums?

In my last article I referred to JOHN TOMES, F.R.S., author of "Tomes Dental Surgery," &c., NASMYTH, well-known for his physiological investigations; SAUNDERS, dentist to Her Majesty; and other eminent English, German, French and American authors and practitioners; Professors PIERCE, BUCKINGHAM, McQUILLEN, FITCH, FLAGG, ALLEN, &c., all of them the very leading talent, and admittedly so. Mr. B. amuses me by asking the pompous question: "Are they practitioners of any high repute?" Perhaps the "American Journal of Dental Science," who does not know "who Mr. B. is" will answer his question. I should like to know who are practitioners of high repute, when we exclude such men as the above, and the host of eminent dentists, who hold the same views of amalgam.

I am sure that Mr. B.'s query will be a source of amusement to the dental profession in general. Possibly he believes that as he—according to his own assertion—is the only skilful and honest Dentist in Canada, so the few extreme opponents of amalgam in the United States are the only intelligent ones left since the days of 1842.

Mr. B. says "I ask Mr. BEERS, "Are the physical conditions of the human frame different in 1870 from what they were in 1847?

If the malpractice of amalgam was determined in 1847, what circumstances can possibly make its use sound and good practice in 1870?" Very easily answered. 1st. I am prepared to debate the former question in the affirmative, at any time. But allowing that they have not undergone any change, I would answer that the common sense and intelligence of 1870, such as shown by Dr. WESTCOTT, is infinitely in advance of 1847, and I pity him if he doubts it. But may I ask him to point out the divine law which made the dictum of 1847 binding on the generation of 1871; and if it was "determined in 1847" that there was no real hope of preserving an abscessed tooth, why we make efforts and succeed in saving them in 1871. Pshaw? such a question is only fit for a *habitant* to ask, who clings to his wooden plough, and his poor agricultural ideas, because his fathers taught him to do so.

How does the matter stand to-day? In favor of the discriminate use of amalgam, we have the very leading men in every country in the world; while on the other hand, they freely admit that gold is the best filling when it can be used to save the tooth. The opinion of John TOMES alone is worth ten times more than that of any prejudiced investigator in America or elsewhere.

I have one serious question to ask Mr. B., which, with the other points, I beg him not to evade. If, as he asserts, he has *always* considered the use of amalgam injurious, and has known in his thirty years practice that it was used, and even very much more used formerly than now, why he waited until the present organization and progressive movement of the dental profession in Canada—in which he shirked a share—to unburden his mind of his opinions? He had such a superabundance of conscientiousness all of a sudden, that he felt "it would be a violation both of duty and conscience to remain silent,"—*yet he remained so a quarter of a century*, and was impelled to come out as an "expositor of the abuses of dentistry," at the very nick of time when dental associations, a college, and a journal were vigorously working for education and reform.

One question more, and I have done with Mr. B.

The early writers against amalgam held the view that because there was mercury in it it was poisonous. Mr. B. quotes Dr. GEO. WATT and Dr. TAFT, of Cincinnatti extensively. Drs. WATT and TAFT say that because there is mercury in amalgam it is poisonous. Mr. B. also says that the mercury in the compound is the reason it is poisonous.

Well, Dr. WATT says of red vulcanite, which is used as a base for artificial teeth, that because there is mercury in it, it is poisonous. Dr. Taft says it is poisonous. Now what about Mr. BOWKER? Oh! he has been using this very red vulcanite since its introduction, and though Drs.

WATT and TAFT, who are so great authorities with him against amalgam say it is poisonous, and Prof. SILLIMAN says that one-third of the whole is sulphide of mercury, and though a host of dentists, chemists and physicians are running the rubber question in the United States just as amalgam was run in 1845, and though Drs. WATT, TAFT, &c., say it causes salivation, produces injurious constitutional effects, &c., yet Mr. BOWKER places it, not in the *bony* substance of a tooth, but covering the mucous membrane of the hard palate! And this tirade against red vulcanite "because there is mercury in it" is of 1870 and 71, not of 1845. Will Mr. BOWKER explain this remarkable inconsistency? Personally I do not believe that if the rubber is properly vulcanized, kept clean, and removed occasionally—as nature never intended the roof of the mouth to be covered with a foreign base—that it is injurious or poisonous; because before the mercury or sulphur can be set free the base must undergo decomposition. The opposition to its use in the States originated when the Goodyear Rubber Co. compelled dentists to pay an annual tax, and its principal opponents are those who have prepared substitutes to take its place, and which they are anxious to sell. But still there is sulphide of mercury in red vulcanite, and how does my opponent reconcile his opposition to amalgam, which keeps hard and perfect for years, with his use of a material which wears away in the mouth; and we know the sulphide of mercury used in the rubber is frequently adulterated with red lead, and bisulphide of arsenic—poisons which are soluble in the mouth.

In conclusion, I hold that if any dentist extracts every tooth he cannot fill with gold, and which can be filled with amalgam, he is guilty of gross injustice to his patients, and gross malpractice. This is the opinion of the leading dentists of the day, and while determining to use gold in every possible case, they are well aware of the risk incurred in extolling a filling so easily introduced as amalgam. There are "cheap dentists" who cannot use gold, and to whose souls a defence of any soft filling is a sweet consolation. I do not defend amalgam, or anything else in the hands of the "cheap dentists." But I know that they *may* make a permanent filling of amalgam, while I know that they cannot make one of gold. Not to mince the matter, the majority of the present extreme opponents of amalgam, are all old-fogy practitioners, who esteem their age and past reputation sufficient reason to dignify the most absurd assertions. The progress of dentistry never was much aided by their efforts, and never will be. They have fallen behind, and have failed to keep pace with that intelligence and freedom from prejudice, which characterizes the men who *now* rank highest in the dental profession of every country in the world.

CORRESPONDENCE.

[Among the scores of opinions on Amalgam sent me by the leading men in the profession, we value the following from the pen of one of widely recognized ability. Though written very hastely and not exactly for publication, it evinces something deeper than second-hand assumption.]

My Dear Sir,—Your favour of 22 prox. came to hand day before yesterday.

I have been experimenting since yesterday morning on amalgams. First, I put into nitric acid one part to four of water, a lump of hard amalgam; second, hydrochloric acid one part to two of water; third, sulphuric acid one part to two; fourth, strong vinegar. A lump of dry amalgam has remained in each since yesterday, the only effect noticeable in either is a slight action of the nitric acid, darkening slightly the surface, without any perceptible change; none of the others have underwent any perceptible change, but remain clear and white.

Now any of these preparations are sufficiently strong to act with energy on teeth in the same length of time, and any of these acids would if retained in the mouth any length of time, excoriate the entire mucous surfaces. Good amalgams are composed of pure tin and silver, andamalgamated with pure mercury. Water does not decompose mercury, silver or tin to any perceptible extent. Nitric acid dilute acts on silver, also mercury separately and less so on tin. Heat facilitating the action when the three are combined, as in amalgam, the acid action is greatly lessened. I do not believe that any action of the fluids of the mouth is sufficient to produce any mercurial salt capable of acting injuriously to the slightest extent, even in cases that have been repeatedly salivated by taking mercurials; if so, I have never witnessed a case during thirty-two years professional observation.

I have seen a filling but a short time since, made of silver filings and mercury, that had been in a lower bicuspid twenty-five years, the filling being perfectly sound and the tooth all round except near the gum where a cavity below had nearly reached the filling. This filling was very dark on the surface, but on running a file over it slightly it gave a pure sound white surface, in consequence I left the filling in and filled below it. This dark surface was the result of the silver oxidizing slightly.

Remove any amalgam filling from any tooth and file the surface, and the filed portion will become white and metallic. In order to get protoxide of mercury, which is the only one of consequence, mercury must be heated up to 600 degrees with free access of air, then red pre-

cipitate is formed, which is the protoxide, and on raising the heat higher, this oxide is again decomposed into the simple elements.

To form calomel, which is a sub-chloride, subnitrate of mercury is precipitated by common salt; it is also formed by other processes. Proto-chloride of mercury, or corrosive sublimate, may be made in several ways. When metallic mercury is heated in chlorine gas it takes fire and burns, producing this salt.

From the above formulas it will be seen that mercury is not readily acted upon by any fluids that may exist in the mouth, as these fluids always contain at least from 800 to 900 parts of water in 1000 parts, so that any acid or any other agent contained in this fluid could absolutely have no action of any moment; neither in tin or silver; the latter turns dark from an oxide being formed in some mouths much more readily than in others; some mouths scarcely acting on a silver plate at all. Youman says that mercury slowly vaporises at all temperatures above 40 degrees; some say all temperatures above 66. The vaporisation goes on more rapidly as the temperature is raised up to the point of ebullition 662.

All the apprehension that need give us any concern in connection with amalgam fillings is the vaporisation during the process of hardening, some of which undoubtedly will be inhaled into the lungs, as this vapor must be lighter than air or it could not be a vapor at all. The amount that might be inhaled would be so insignificant that it would not do any mischief, as it would be carried out of the lungs again even if it passed the entire rounds of the circulation.

Workers in-quick silver are short-lived, owing to the fact that they are constantly in an atmosphere charged with these vapors, which no doubt keep their systems saturated during their working hours, which in a few causes a total lesion of nutrition, the hair and nails fall off, the hard tissues become saturated; the periostium fails to nourish the bones, and the poor wretches die from exhaustion.

The insignificant amount of this vapor escaping from a fine amalgam filling could produced no injurious effect. The vapor will salivate when sufficient has been inhaled, which is the first effect of allmost all forms of mercury, however introduced into the system. Mercury in its action is an irritating stimulant, to the glands more especially, the liver primarily, the oral secondarily.

March 31.—All the specimens have now been in the acids 48 hours; none of them are in the least affected, except that in the nitric acid, which is nearly all decomposed, with some precipitate of tin I suppose, at the bottom. It will be seen that in 24 hours there was scarcely any

action at all by the nitric acid, and now none at all by any action of the other acids.

I think these conclusions are sustained by demonstrable facts as given above.

S. P. CUTLER, M.D., D.D.S.
Professor of Chemistry, Metallurgy, Microscopy and Histology in New Orleans Dental College.

New Orleans.

PROCEEDINGS OF DENTAL SOCIETIES.

MONTREAL DENTAL SOCIETY.

BY L. J. LEBLANC, L.D.S., SECY.

The second monthly meeting was held at the office of Mr. Leblanc on Monday evening, the 3rd of April. Mr. Leblanc read an essay on "Dental Hygiene," which will appear in the Journal. The President read a synopsis of a document being prepared to be sanctioned by the Dental Societies of Canada, relative to the imposition practiced by quack dentists, and which it is proposed to publish in every English and French paper in the Dominion. The only effectual way to repress quackery seems to be by thorough exposure. It is hoped that this document will induce some of the latter to reply, when an array of facts from their private practice will be published.

Experiments with nitrous oxide on animals under a glass bell was tried.

A number of very rare and interesting cases of necrosis, fibrous and osseous tumors, &c., in connection with the teeth, were exhibited. Dr. Alloway was appointed to prepare an essay for the next meeting.

MASSACHUSETTS DENTAL SOCIETY, BOSTON, APRIL 11.

[We had the very great pleasure of attending the last monthly meeting of the above Society—the leading one of the kind in Massachusetts—in Boston, and will endeavor to give a brief *outline* of the proceedings. The M. D. S. is no old-fogy association, but a live active body, whose younger members have old heads on young shoulders, and whose elders have all the vim and energy of youth.]—W. G. B.

Dr. CHANDLER, President, in the Chair.

The topic for discussion was the continuation of the subject of last month: "The time for Filling Teeth."

DR. WATERS.—Various circumstances should guide the intelligent dentist in deciding *when* as well as how to fill a *child's* tooth. Very

frequently teeth have large foramens at the apex of the root, and there is danger then of lacerating the periosteal tissue in introducing a gold filling. He would temporize with oxy-chloride of zinc, amalgam, or gutta percha, leaving it in for a year or so, and then replacing with gold. He did not suppose there was any definite rule as to the time to fill a tooth. The age of the patient, the development of the tooth, and other circumstances were to be considered. Some idea, too, may be gained from the development of the parents' teeth. When the central incisors are developed at six years of age, and the first permanent molars at the same time, or perhaps sometime in advance, there is a tendency to approximal decay, because the teeth have been developed with a strong pressure on their approximal surface. The law of crystallization is the same in the mouth as out of it. When a tooth has equal pressure on all sides, crystallization will be symmetrical. When the first permanent molars are decayed he fills temporarily. Where he can control the presence of the patient, he waits, in the case of decaying incisors, until the cavity has commenced forming.

Dr. LEACH.—There are still other circumstances to be weighed before proceeding to fill any tooth. He had often seen in the mouths of adults many fillings well inserted, but the surrouuding condition unhealthy and unclean, calcareous deposits, turgid and swollen gums, foulness of breath therefrom, and utter disregard of hygienic rules. There is a time to fill and a time to clean. One of the times not to fill is until a healthy condition of the integuments of the jaw and the membranous coverings of the mouth is obtained. When a patient presents for filling teeth, the question should be mentally asked, "Are these teeth as firm and healthy as they might be? Will it be safe to delay any and all filling until a healthy condition of the surroundings can be produced?"

He would first secure the entire removal of all foreign matter before filling. He would see that the secretions are as healthy as we can make them.

He would fill small cavities and not leave them until adjacent fissures have become cavities. When fissures begin to extend, he would cut them out and fill. The time to fill is when we cannot honestly leave decay alone.

[Mr. BEERS was then introduced to the meeting, and, by request, gave an account of the position occupied by dentistry in Canada.]

Dr. WETHERBEE.—While no one doubts the propriety of cleaning the teeth as the first act to be performed, we should also conclude to do it thoroughly. He objected to two sittings for a tooth. If he had "to carry the war into Africa," he would do it at one sitting. Why? To

prevent unnecessary inflammation of the periosteum and gums ; both of which are more or less touched in the operation of probing. He would not advise all the upper and lower teeth to be cleaned at one sitting; but he would finish cleaning one tooth before filling.

Supposing a case of exposed pulp. Shall I cover it, and try to preserve it. Who values success will not wait in such a case to clean. He will cap the pulp and fill the cavity. If a cavity is not deep, he would remove the tartar to sweeten the breath.

In some cases, when there is decay, it is visible through the enamel, dentine discolored, crystallization not having been perfect. Shall we leave that interstice as it is, or open it ? He would take a cone-shaped drill, open the cavity and save the tooth. In some cases the corners of the fissure can be taken off, opened saucer-shaped, and by being kept clean, preserved without filling. He would not postpone filling if the tooth required it at all. In the twelve-year old molar, a tiny excavator may be frequently passed through the enamel; and the result of postponing opening and filling in such a case is disastrous. The crown breaks down ; the patient may neglect to return in time, and the tooth is ruined. The time to fill is as soon as the enamel becomes disintegrated, on the buccal or lingual, and approximal surfaces; often before the enamel is actually destroyed.

He held that often the teeth should be *filed* between the six-year old molar and second deciduous molar, a V shape, and that decay would be less likely to affect the former. He uses oxy-chloride of zinc or amalgam for temporary fillings.

Dr. J. T. Codman.—Old observers state that the teeth of Europeans, especially the Germans, have flat crowns; while those of the Americans are sharper. (Dr. Codman drew diagrams on the blackboard, illustrating this difference in the cusps of the teeth.) This consideration would lead us to the bottom of the primary cause of caries. He considered the European a more normal development of tooth than the American. He showed the cruciform cavity in the centre of the molar, and the cavity dividing the cusps of the bicuspids, both of which he considered arose from imperfect development. Nine cases in ten of such cavities arise from imperfectly developed enamel. In the formation of the tooth, the enamel membrane joins at the centre of the cusps of bicuspids, and an open space is sometimes left down to the dentine below. Dr. C. illustrated the development of the enamel at this point, and said he did not know why European and American teeth differed so much in development. Some attribute it to the former's use of hard bread during the growth of the teeth. They never use new bread in Europe. When we see the

flat crown and cusp tooth we can trust the tooth; when we see the cusps sharp pointed and high, let our investigations be minute, for we will have to fill.

Dr. MOFFATT.—If we could order teeth we would have them flat cusped; but he questioned if we ever saw the extreme development of the cusps described by Dr. CODMAN. The molars and bicuspids develop from the point of the cusps. As they increase in size and development they join. Frequently there is imperfect joint of development between the cusps, food is forced into it, the depression cannot be cleansed properly, the food ferments and decay commences. American diet has a great deal to answer for in relation to the decay of teeth. The Europeans generally use the hulls of the wheat, black bread; thus saving the phosphates and silicates, which are retained in the hulls and easily assimilated by the stomach, &c. We frequently see cusps worn flat by use, in old age, which once were normally prominent. In filling a cavity between the cusps we would build up between, to give a flatter grinding surface than nature had bestowed.

Dr. HITCHCOCK.—The theory of the article of diet has something to do with decay. Families who eat meat principally, have cusps more fully developed, approaching the carnivorous. He thought the theory of regulating the development of the teeth by diet would take several generations. Dr. HITCHCOCK criticised on the blackboard the diagrams drawn by Dr. CODMAN. He referred to microscopical cavities through the surface of enamel and denntine, which are often filled with cementum when first developed, this wearing off in the course of time. The use of animal food tends to act mechanically upon the cusps and there is less danger of decay than if soft articles of diet are alone used. He referred to an article written in Germany, showing the different effects of the atmospheres of Europe and America, in points of food, building, drying clothes, &c. Bread would keep in Europe longer than in America. The relative liability of the teeth to decay in Europe and America is greater here. In 1862, twenty out of one thousand recruits were rejected in the American army for loss of teeth; eight out of one thousand in the English army; and only one out of four thousand in Belgium.

Dr. MOFFATT:—We should study the comparative anatomy of the teeth in mankind and the lower animals, carnivorous, herbivorous and omnivorous; and trusted the society would devote more attention to the point.

Dr. WATERS, would also exhibit his art in chalk, on the blackboard. His ideas were derived from obervation: he illustrated a case of a young man seven years old, who came to him, to consult about a

tooth which without any apparent decay, had turned a dark blue. At the highest point of the cusp a small speck was seen, the point was tapped, and a small instrument was pushed down into a cavity. Suddenly the whole lingual surface of the tooth fell over. At one point under the gums crystallization had not taken place. Whether the decay had started from the speck in the cusp, or the imperfection at the neck, was a mystery. He capped with oxy-chloride of zinc, and built out with amalgam, intending to keep the tooth in the mouth until the development of the bicuspid, and then extract it.

Dr. SHEPHARD:—Would recal the subject proper for discussion. Many err in trying to do too thorough work, and in cutting out normal lines which *may* develop into fissures, but which have not formed. He prefers to fill all small cavities in a tooth as early as the decay is developed, and wait for the development of the fissures. He had seen lamentable results from too "thorough" cutting and chiselling. Filling a twelve-year old molar at thirteen years of age is different from filling it at twenty-five. The theory of introducing a soft filling in early age is good. He prefered tin to gold for young teeth. Amalgam may be used, and we find the teeth saved and ready for gold ten years after. He thought caution was necessary in cutting the enamel tissue in its early development. As to microscopic fissures, he would leave to nature the hardening of the tissues, and in a certain class of teeth fissures will never develop into decay. Frequent visits from the patient should be obtained, and the fissures watched. Give the tooth and nature the benefit of delay, guiding everything, of course, by knowledge of the habits and constitution of the patient.

After the presentation of specimens of abnormal development, the subject of *Pyroxyline* was opened and elicited a growing disposition to favor the new base. In the next number of the Journal we will publish the Report of the Society, with reference to this base.

EDITORIAL.

THE PYROXYLINE BASE.

When one finds he has made a mistake in judgment, and awarded hasty condemnation, the sooner he recants the better. In a former number of the Journal we referred to the Pyroxyline Base and questioned its chances of success. Its merits were somewhat depreciated, and the only consolation we possess for speaking so hastily, lies in the fact that a

large number of the profession in Canada and the United States did likewise.

We lately spent nearly a week in Boston at the office of Brockway, Mayo & Howes, 94 Tremont st., the only reliable instructors, and sole patentees, and had all our prejudices and doubts removed; and we take pleasure in frankly avowing our confidence in the new Base and its great superiority over every other material in the market. The attention and care required in manipulation, is just the very thing to commend it with those dentists who are disgusted with the puttying and pasting of rubber, &c. It must certainly tend to elevate mechanical dentistry, as well as the profession in general. We saw cases in the mouth worn with comfort; we saw the shrinkage completely overcome, and the speed with which a set can be made; the simple way in which blocks can be removed and replaced, and the beautiful finish capable of being given to it.

The instructions given to us in Canada by at least one agent in the course of an hour, led to failures. Messrs. Brockway, Mayo & Howes will probably publish in the next number of this Journal the arrangements they have made for instructing the Canadian profession.

They are perfectly agreeable to the instructions for manipulation being published. They have invested a large amount in machinery to make the Base, and it seems that a patent was an absolute necessity to secure themselves from loss and imposition. We shall have more to say about it in the next number.

B.

R. TROTTER, Esq.

We are sure our readers will be pleased to learn that our old colaborator, R. Trotter, formerly of Guelph, Ont., is alive and doing well. He left Canada about two years ago for the States, and settled in Missouri, where in consequence of a partial loss of sight he accepted a lucrative situation on the staff of the National Life Insurance Co., of St. Louis. We wish him, as he is deserving, every success.

OBITUARY.

We regret to learn of the death, on February 14th, of Dr. Henry E. Peebles, one of the committee of publication of our excellent Exchange, the *Missouri Dental Journal.*

CROWDED OUT.

A large amount of interesting matter received late, is crowed out. The next member promises to be one of the best of the volume.

A. Bernard
President.

THE CANADA

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ORIGINAL COMMUNICATIONS.

ALDIS BERNARD, L.D.S.,

President of the Dental Board of Examiners, Province of Quebec.

We have much pleasure this month in presenting our Canadian subscribers with a fac-simile of Dr. A. Bernard, who is, we think, the oldest living dental practitioner in the Dominion.

Dr. Bernard is a native of Canada, having been born on the banks of the beautiful Memphremagog. When a child he was taken to the United States, and when very young acquired all the knowledge of dentistry then attainable. He practiced about ten years in the Southern States, itinerating, as was then the fashion with Dentists. Mineral Teeth were altogether unknown at that time, and human, calves and sheeps teeth, also Hippopotamus, were then used, and the general position of dentistry was at a low ebb. In the summer of 1839–40, he came to the north in consequence of ill health; spent his time at Niagara, Lake Huron, and other parts of Ontario. In the Autumn of 1841 (thirty years ago) he came to Montreal, where he has ever since been in constant practise. There were only three dentists in the city at that time, viz., Spooner, Logan and Scripture. The latter died shortly after, Logan went to Europe, and Spooner transferred his practice to Dickinson, and removed to the States. Scores of dentists have since come and gone. In 1844, when Montreal was the seat of Government, Dr. Bernard made an effort to improve the condition of the dental profession by legislation, which was very nearly successful, when the Parliament Buildings were burned, and the medical act in which were included the clauses regulating dental practice was destroyed. In the recent successful incorporation of the Profession of the Province of Quebec, and in every associative movement designed to educate and elevate, Dr. Bernard has taken an active and prominent part. His

knowledge of politics and the natural energy of his character have been of very material aid.

He has always taken an active interest in public matters and institutions; was President of the Mechanics' Institute, and for more than sixteen consecutive years connected with its management. He is a member of the Natural History Society, and one of the founders and managers of the Society for the Prevention of Cruelty to Animals, and Honorary Dental Licentiate of Ontario, Honorary Member of the Ontario Dental Society, &c.

For a long series of years he has been an active and earnest Free Mason; was one of the principal founders of the Grand Lodge of Canada in 1855, and its first Deputy Grand Master. He now holds the rank of Past Grand Master.

Dr. Bernard was elected a member of the City Council of Montreal in 1858, and still represents the Centre Ward, for which he was first elected, having been several times elected by acclamation. He is the second senior Alderman of the City; a member of the Finance Committee; Chairman of the Police Committee, and also of the Committee for building the new City Hall (which is to be a splendid edifice, and costing $300,000). He is also a magistrate of the District, and one of the License Commissioners for Montreal, appointed by Act of the Legislature last session. He has been asked to stand for the Legislature several times, but declined. An able and eloquent speaker, an energetic worker, and possessed of a remarkably vigorous constitution, he makes his mark in whatever sphere he acts. As a citizen he has served the public faithfully. As a dentist, he holds the firm confidence of his patients and the high respect of his *confrères*.

A CASE OF EXPOSED PULP.

By S. P. Cutler, M.D., D.D.S.

Read before the New Orleans Dental Association.

I filled an upper anterior molar on the left side some 12 months since, for a young man, with amalgam, there being a slight exposure of the nerve in the bottom of the cavity, the decay being a large one, and in the grinding surface. The tooth had never ached, only slightly, when chewing on it. After filling there was some sensibility, and occasionally some slight pain a few months afterwards. On one occasion, about 7 or 8 months afterwards, he came to me with the tooth aching; on the application of chloroform to the tooth and gums the tooth got easy, and

remained so for several months, only occasional slight trouble. The other day, now February 6, 1871, he called, with difficulty in the tooth that had prevented him from sleeping. I at once decided to drill the filling out, which was a difficult task. I also tried mercury and the warm instrument but with slow progress. On removal I found slight exposure of pulp in the bottom; no discoloration; no change in the amalgam, as it was an excellent article, and entire relief followed removal; by a slight touch with a sharp excavator hæmorrhage ensued. I treated the case with creosote at bottom and styptic calloid over for one week or more, the tooth remaining all the while perfectly quiet. One interesting feature in this case is that the pulsations of the pulp could be distinctly seen with a magnifyer at the point of exposure—every *systole* of the heart, the pulp at that point filling the slight vacancy caused at every diastole.

The pulp seemed to expand and contract according to the heart's action. Every time it expanded up into the slight opening there was a small bubble of liquid as I dryed the cavity, that apparently came from the pulp chamber falling back into the chamber at each diastole. On application of the tongue over the cavity a distinct pulsation would be felt for a few minutes, at which time the throbbing seemed to be much more energetic, which lasted for a few minutes only.

I decided on refilling with some temporary filling, as he had to leave the city and would be absent for 5 or 6 months. I cut a round piece of soft spunk of good texture and thickness, moistened one side with creosote, then laid this in the bottom of the cavity, creosote side to the nerve, pressed it in all round gently and filled over with os artificial without the slightest pain or trouble. This spunk is very soft and elastic, and would readily yield to the pulsatory motions of pulp—more readily than any thing I knew of. I saw him this morning, there was not the slightest trouble whatever, the filling now having been in 24 hours. This case in itself is not of much moment as an isolated case, only it serves for a text for further remarks, and is a practical case in point.

It is well known that the pulp does not exactly fill the chamber full, but has a small space all round it, which is recognisable by a magnifyer of ½ inch focus or more. This minute space serves as a reservoir to hold the reserve nutriment liquor sanguinis for the use of the dentinal fibrils, as nutrition—*I might call it by some other name*—and also to return waste matters to the circulation. There seems to be, then, another, and not less important function connected with this small outside space, that is, that it allows room for the pulp to expand and contract, in accordance

with distention and contraction caused by the action of heart and arteries, so as not to cause pain at every pulsation by the pressure, as must necessarily be the case if the pulp completely filled the cavity full. The same state of things exists in the cranium, and no doubt for the same purpose. As a matter of course, the outer membrane of the pulp is perforated by millions of openings where the nerve fibrils pass out from the pulp and into the tubuli, or, vice versa. These openings, no doubt, allow the liquor sanguinis to pass out into the space in question. It is well known that fluids, such as water, cannot be readily condensed to any great extent, but to a slight extent. Now there must be yielding somewhere, as the pulp pulsates even in normal conditions. This fluid may suffer a slight condensation, also be forced to some extent in among the nerve fibrils in the tubuli. Another useful purpose might be that of anti-friction, preventing the pulp membrane from coming in contact with dry, harsh, solid walls which must necessarily be the case in the absence of a fluid which serves as a cushion to prevent irritation to the pulp at every beat of the heart. This fluid lubricates the pulp. Now, if these openings through the pulp membrane are in free communication with this chamber as the pulp swells out at each pulsation, the membrane must slip backwards and forwards on the nerve fibrils that pass through them, and, at the same time, allow this fluid to pass into the pulp around those fibrils for a short distance, and, as the pulp contracts, is forced out again so as to keep the cavity uniformly full under all circumstances in a state of health.

This continued bathing of the fibrils with this liquor in the manner above suggested may be essential to the healthy condition of the entire tooth. In a state of high vascular action or inflammation of the pulp the pulsatory phenomenon is much augmented. The vessels in the delicate pulp tissue distended, the circulation retarded, not readily passing through the capillaries in consequence. The force of the heart's action drives the flowing tide violently against the obstructed vessels which gives or imparts a strong pulsatory impression at the arterial extremity of the artery, which is felt throughout the capillaries of the inflamed point, which in the pulp are more circumscribed than almost anywhere else. The white appearance of the pulp when removed in a healthy condition, would lead to the inference that white blood only or liquor sanguinis circulated in the pulp substance. This question is easily decided, as the slightest wound of the exposed pulp causes hæmorrhage of red blood, even when not inflamed in the slightest degree. When inflammation or congestion exists on removal, the pulp presents a red or injected appearance, with more or less lesion of vessels, and red corpuscles may be found outside of the capillary as in other instances of inflammation.

The reason why the pulp does not present a reddish instead of a white appearance, is owing to the fact that all the vessels in a normal condition are extremely small, with a very limited circulation, as the whole pulp is but an insignificant structure in the fully developed tooth.

The skin and scharotic coat of the eye are in many cases almost perfectly white, not showing red blood unless distention of vessels exists, or abrasion and ecchymosis. When a pulp is removed from a healthy tooth and subjected to the microscope very little blood is discovered. In fact, the proportion of red corpuscles to the white corpuscles may be in the pulp much less than in other tissues, and the proportion of liquor sanguinis much larger than other tissue.

When the pure alabaster skin is pricked with a delicate needle, red blood oozes out, also the scharotic of the eye; not so when the corneal coat is wounded, as no red blood in the healthy state circulates there, only lymph.

In fact, very little red blood is needed in the dental pulp, as the red corpuscles are the chief factors for carrying oxygen to the tissues and carbonic acid gas from them. The needed supply of oxygen in the pulp must needs be very insignificant, owing to the smallness of the pulp, still a given amount is necessary. The liquor sanguinis found outside of the pulp is there for a twofold purpose, both important to health of the entire tooth. This is called protoplasma by William Huxley, germinal matter by Mr. Beale, blastima by Reirchowe. Mr. Beale has also given it the name of bioplasm, all having about the same significance. It is the true element of reproductive metamorphosis or nutrition, which counteracts waste or dysintegration.

The other function performed by this fluid has already been alluded to, that is lubrication and anti-friction, to the pulsatory motions of the pulp.

Another reason why the pulp in a healthy state is white, is that the vessels are so small that the corpuscles pass along single file, and in this manner do not reflect red rays, only very faintly; even under the microscope isolated red corpuscles scarcely appear red, and an inexperienced observer would not be likely to notice it at first.

Another reason why the blood from the healthy pulp always has the appearance of arteroid blood is the very small amount of carbonic acid found in the pulp, owing to the limited amount of oxidation going on in the tooth, hence the blood is, when the tooth is healthy, always arterial in appearance, none of the vessels being much larger than capillary in general, it being very difficult to distinguish any difference in the vessels of the pulp.

The pulp in a state of congestion or stacis in the circulation, and inflammation presents a red engorged appearance, similar to all other tissues in a similar condition.

It is believed by many authors that the red corpuscles leave the circulation, or pass bodily through the weakened walls of the capillary vessels in inflammation.

At all events, they aggregate in those vessels by retarded motion and distention, in consequence presenting an injected appearance, as in ecchymosis. I heard from this tooth several weeks afterwards not the slightest difficulty. I have since filled a great many similar teeth in the same way, with gold, amalgam and os artificial; all successful so far, not the slightest trouble in any case.

DENTAL PERIOSTITIS.

BY C. A. MONDELET, L.D.S., OTTAWA.

Periostitis is frequently induced by the disintegration of a pulp; in which case the nerve cavity should be opened and thoroughly cleansed to the apex of the fang, after which a treatment of creasote, or a solution of creasote and iodine, may be used effectively, or local depletion may be resorted to. When periostitis is induced in a sound tooth by pressure, or the presence of a foreign body, the irritating substance should first be removed, then the gums contiguous to the affected tooth freely scarified; or counter irritation may be induced by making an incision through the gum near the apex of the fang, and inserting a pledget of cotton and allowing it to remain. In periostitis caused by pressure in inserting a fang filling, either of the previous methods may be employed, or the application of one or two Spanish leeches to the gum will prove effective, the hemorrhage from the least bite being very profuse, owing, it is said, to a peculiar secretion left in the wound by the leech, which prevents the coagulation of the blood. Local depletion is the most effective remedy, the efficacy of the leech being due to the quantity of blood abstracted. If the inflammatory action be allowed to progress, alveolar abscess, or termination by suppuration will ensue, when the periosteum will separate from the end of the fang, forming a sac; coagulable lymph will be thrown out, the sac will enlarge, and the bony walls of the alveolus be removed by absorption for its accommodation.

Pus is first developed in the centre of the mass of lymph by the disintegration of exudation corpuscles. As inflammation progresses, lymph continues to be thrown out and degenerated until an opening for the discharge of the pus is effected, which may be either through the canal

of the tooth or the gum, or a fistula may be established through the substance of the cheek. In the superior molar, the plate of bone between the ends of the fangs over the antrum, being in some cases very thin, the discharge may effect its escape into the antrum, or the sac itself may protrude into and lay upon the floor of this cavity. In such a case, the tooth should be extracted, and the antrum thoroughly cleansed by injecting tepid water through the alveolar opening, and this, in a majority of cases dependent upon the teeth, will be all the treatment necessary to insure a speedy return to health.

A patient, at present under my charge, of a marked scrofulous diathesis, has suffered from diseased antrum for one year. In this case I extracted the tooth, and on entrance to the antrum, through the alveolar, easily affected through this openi*n*g, the antrum is treated with a solution of nitrate of silver, grs. iij· to ℥ j. water. The case is daily improving, the offensive odor having nearly disappeared, and the discharge diminishing and becoming of a healthy cha acter.

The formation of pus is indicated by the subsidence of acute pain, a dull throbbing ache being experienced instead. The gum also becomes red and tumefied, and upon pressing it with the finger, it will impart a peculiar fluctuating sensation. The abscess should now be freely opened and all the pus evacuated: upon the discharge of pus the swelling generally subsides, and though the patient may experience no inconvenience for a time, he is liable to a recurrence of the inflammatory action, when lymph will again be poured out and disintegrated, until the sac is refilled and discharged as before; or there may be a slight but continued discharge for years, unless some means for its prevention be employed. Strict attention is required from the commencement of inflammation; for when it terminates by suppuration, the formation of pus is sometimes very profuse, tunneling the bone from tooth to tooth, until an abscess of large extent is formed, resulting in death and exfoliation of more or less of the bone, according to the degree to which it is involved. The pus in such a case is generally of a dark color, and almost insupportable odor. Another result of suppuration is a fistula through the cheek, producing a troublesome sore, and when healed a deforming scar remains. The course of a fistula when healed will frequently feel hard like a cord when pressed by the finger. This should be divided by passing a lancet beneath the hardened portion, and cutting from below, upwards, completely severing it; and when the adhesion is considerable, a tent of cotton should be placed between the edges of the wound, thus preventing their approximation and partially relieving the deformity.

TIN FOIL.

By L. D. Walter, D.D.S., Rochester, N.Y.

It is very seldom, indeed, that anything is said in the *Dental Journals* concerning the history and properties of this (to the dentists) almost indispensible article. Its history, as a metal, is given in detail in all works on metallurgy, and, as a filling, in the two or three works now extant on operative dentistry. Its properties are mentioned and dilated upon more or less completely in the above works, but the one to which this article would call attention—the property of cohesiveness—is set aside and numbered with those deserving of little, if any, consideration. That tin foil is cohesive to quite a marked degree is not generally known; a fact attributable partly to faulty manipulations, and partly to the scarcity of a pure article properly prepared. This cohesive property is seldom recognized (for the reasons above stated), though it is often ignorantly made use of by old and young operators.

In tin foil, as well as in gold, it is found best developed in the pure article. It is not found necessarily in pure tin any more than it is necessarily found in gold foil; for it is well known that gold foil may be pure and yet not cohesive; and, if the property of cohesiveness does not depend upon the purity entirely, of the material, it must depend, more or less, upon the treatment to which the material is subjected during its manufacture.

Heretofore gold foil has absorbed almost the entire attention of foil manufacturers, while tin foil has been made and thrown into the market merely, it would seem, to make truthful the statement common to all circulars, that "So and So manufactures dentists' foil of all kinds." In manufacturing a superior article of tin foil, manufacturers would be advancing greatly their own interests, and also the interest of their patrons, for the latter would willingly give much more for a good article than they are now paying for an impure, improperly prepared and almost worthless stuff, commonly sold at the dental depots. But, to return: a good article at hand, it should not be handled more than is absolutely needful; in fact, should be treated as carefully as gold foil. The common method of rolling into a rope and cutting off in short pieces, is convenient, but has a tendency to destroy the integrity of the foil and render it less cohesive. I prefer to fold the coil carefully in strips of from two to three or more layers in thickness, and pack as with gold foil, folded in the same manner. It is often convenient to cut these strips into little blocks. An annealing pan, kept at a comparatively low temperature, is a valuable accessory while packing the tin. A water bath (the temperature of

which cannot possibly exceed 212° F.) is, perhaps, preferable to the pan. The most desirable instruments are those having broad working ends, with well defined and sharp serrations—Butler's condensers, for example.

DENTAL HYGIENE.

BY L. J. B. LEBLANC, L.D.S.

Translated from the French.

Read before the Montreal Dental Society.

In writing these few lines, a natural desire, and the deep interest I have for the Society, have induced me to submit to you the result of my observations, my labor, and my short experience in all which can promote the embellishment and preservation of one of our principal organs; chiefly because this organ is called to perform an important part in animal economy, and in our professional relations with society.

Much has been said and written on this interesting part of our art. A few months ago in Quebec, one of our amiable and learned colleagues delivered before you a lecture on the same subject. His essay, admirably composed, delighted you to the utmost extent, by its style and the novelty of its ideas. Without the pretension of giving you a lecture equal to it, and still less of surpassing it, I shall endeavor to fill a few blanks which were left in it.

Within the last century, great writers have displayed a noble ardor for the advancement of dental science. They make every exertion to write as many books as possible and invent the best instruments. France and England have had the honor of giving birth to those eminent men, but to-day, that worthy zeal for science seems to have cooled down; one would think that those two nations begin to feel tired, that they give up their work to rest themselves under the shade of their laurels. The names of the most distinguished dentists of France, who immortalized themselves by the importance of their discoveries, are those of Messrs. Duval, Maury, de la Barre, Regnard, &c., (in the office of the latter my predecessor, Dr. Jourdain, learned his art). In England we boast of the names of Messrs. Hunter, Fox, Bell and Tomes. Now, to-day, that those two nations are nearly inactive, another young and intelligent country appears to us—it is the American. That nation, endowed with an extraordinary genius, have the benefit of those different discoveries, and have improved our art to such an extent in its mechanical and surgical part, that at present our labor is performed very quickly.

I have not the intention of writing a work of considerable length, but a mere essay on dental hygiene, and I shall abstain from those long technical words, more or less irregular; some would seem like India-rubber, on account of the facility with which they are lengthened at pleasure. My object is, therefore, to awaken the attention of the public on one of thei rmost precious advantages, while, in order to preserve them, they display the most incomprehensible indifference. Nevertheless, this subject concerns, at the same time, the cleanliness, health and rest which are obtained only by the absence of pain and the most constant care. We do not agree, I believe, on what really constitutes beauty. Our different ways of seeing and judging render its definition an object of great difficulty. All the parts which compose the human figure vary in their form to the utmost extent. That is why we are prevented from clearly defining it, and describing how their harmony produces what we agree to call a handsome or ugly face. So we are induced to say that beauty is only and properly regarded as such by a general and implied convention; but that convention is unspecified according to different climates—for instance, a narrow forehead, thick lips, a broad flat nose, wool instead of hair, are the marks of beauty among Africans, and among us, signs of ugliness. But teeth are said to be handsome, when they are white and well arranged. When Nature made them handsome, it took everywhere the same care of setting them in rosy gums; and the carmine of the lips set off their whiteness still more. They are not only ornamental but also very useful to health. Many, however, seem to be ignorant of that important truth. Nevertheless the slightest attention is needed to convince one's self that teeth are absolutely necessary to the preservation of the animal economy, since they are designed for one of our principal functions. How many teeth were broken by imprudence and vain show, especially among those set for the trituration of food, and consequently for the easy digestion of the stomach, which is only the secondary agent and above all the protector of health; hence if it is deprived of the preparatory work of the jaw, and receiving but food half triturated, its various functions are laborious—wasting slowly its elasticity, it grows weak, and loses that vigor which, when once lost, cannot be restored by the most powerful tonics, and the richest of victuals. "You are a foe to your life if you do not masticate well" says the Latin proverb. Those who have good teeth and do not masticate well can profit by this lesson. But what can we say to those who have bad ones? They must guard against that difficulty by dint of care, since a good mastication is so necessary to health. Yes, when the uneasiness, the bad digestion and the weakness of the stomach set in, one says: "If I had

my teeth, I would give a great deal;" but when you had them, you should have preserved them—it was perhaps troublesome, but it is far more troublesome at present. A physician said very wittily: "Formerly the fable of the stomach and its parts was composed, but if at present we wrote that of the stomach and the teeth—oh! how numerous would be the wrongs of the latter towards the former." The same writer attributes rightly a great number of diseases of which the cause is unknown, to the impurities that the saliva of slovenly mouths carry in the blood, bringing them along by mastication. This causes at length a bad chyle always injurious to health.

You can see, gentlemen, that the teeth are as necessary to health as to beauty; it is for that reason that we always seek the means of keeping them sound. The process for that aim is ordinarily slow. It is submitted to general rules which I will explain as briefly as possible.

Generally teeth of the first dentition are not susceptible of any care for cleanliness, unless they be affected by decay, in which case they must be plugged, and brushed often in order to check the progress of that affection. It is at the age of seven or eight that children should be taught the habit of brushing their teeth twice or three times a week, with a soft brush, so as to provide against caries, and the pains, more or less smarting, resulting from it. By these means the teeth and the mouth are kept in a state of cleanliness and freshness which is so agreeable. In case the teeth should be covered with tartar, it would be necessary to remove it to avoid caries or inflammation of the gums. Another inconvenience of tartar is that it causes an offensive breath.

From the age of 15 the teeth must be brushed every day, and with a powder well prepared, two or three times a week. The remainder of the time with a liquid, acting like a tonic, which will dissolve in the same time the mucus deposited on our teeth while sleeping. Experience teaches us, gentlemen, that their daily cleaning is their best preservative. It would be more suitable to clean them after meals in order to remove the alimentary substances; and if particles of food are deeply placed in them, a tooth-pick should be used, a custom generally known at present. There are parties who satisfy themselves with a piece of linen to rub their teeth, without taking the precaution of rinsing the mouth. This is far from being the clean and proper way; on the contrary, it is very injurious, because a certain pressure is made on the gums, and that habit has no other advantage but that of gathering and hardening tartar in places where it is liable to accumulate itself, that is to say, between the teeth and their necks.

Now, persons wearing false teeth are not absolved from cleanliness,

more than others; they should take a great care of the mouth; if otherwise, the sets cover themselves with food and tartar, which remaining habitually in moist and warm places, become infected and cause a great deal of inflammation to the mucous parts, and then the mouth becomes the seat of an intolerable smell. Unfortunately, gentlemen, we have often the evidence of what I have just said. A man must despise himself to a great extent to keep so much dirtiness, and we, poor dentists, are often compelled to stand a good distance from these persons, and in spite of us, their breath, which is able to kill flies while flying, reaches us; we would not be so unlucky if nature had given them, as to the alligators of San Domingo, under their lower jaw, the advantage of having a gland holding musk.

Though the rubbing of the teeth with a mere brush dipped in aromatized water is nearly always sufficient for maintaining the cleanliness of these organs, there are nevertheless persons either by the nature of their constitution or by previous negligence, who are compelled to seek more energetic means, that is to say, making a great use of powders.

I shall say a few words on those which are still employed at present. Coal well ground, is a popular dentifrice; it is an antiseptic; its use almost given up, still they prepare it in our drug stores; its action is nearly useless on the enamel—its constant use ends by causing the teeth to appear black and the gums as afflicted with scurvy. This applies also to burnt crusts of bread which are used by several persons. Soot has been used for some time because it was believed that the chimney sweep's teeth were always white—that belief is erroneous. Their teeth appear white because their faces are black—as for instance, with negroes it is the mere contrast of the colour of their skin. Notwithstanding, the latter possess good, handsome and strong teeth. Its use is utterly unclean. Cinchona is a torpid powder, but its taste and color on the one hand, and on the other its tanning principle, which at length makes the enamel yellow, cannot recommend it as a dentifrice. It has, however, the property of hardening the gums. What I have said of cinchona can also be applied to tobacco.

Salt is by no means injurious, but it determines a considerable secretion of saliva.

Cigar ashes are also in use, that powder is very unwholesome—it is too strong an alkali. Alum, that substance which we can rank with tartaric and oxalic acid, are too strong powders, unless in order to use them we mix them with an absorbing substance having the property of neutralizing their acidity. We must mistrust those patented liquids and powders, the pompous names of which fill the columns of our newspapers,

ornament the corners of our streets, and are used as mile-posts on country roads. Remember well, the action of those patented drugs is magic—it is exactly there where lies the evil, because the only dentifrices which can give quickly a shining white ivory-looking appearance to the teeth are acid. One could not be too cautious in using them, since they determine on those organs the same effect produced on marble by a few drops of diluted acid. The calcareous phosphate, which is the base of the enamel, is dissolved, causing its polish to be removed, and the teeth thereafter are more liable to retain that kind of mucus which previously had a tendency to accumulate on them. They assume an indelible yellow tint, and if you continue to use those compounds, if the acids constituting their bases are too concentrated, they will soon uncover the gelatinous substance of the teeth, which will cause aching, caries, and their extraction will become unavoidable.

Yes, gentlemen, the first quality of a dentifrice is to clean the teeth thoroughly and without injury.

1st. "Whatever may be the mode of preparation of those tooth powders," says Dr. Maury, "we must exclude from their composition all substances liable to alter the enamel of the teeth, since those sorts of preparations are to be used only to maintain their whiteness by removing the tartar which gathers on them.

2d. "You must note their action on the gums." Are those conditions observed in the patent dentifrices offered to the public with the most pompous names? I entertain great doubts about that. It is a mere speculation now-a-days, and the voice of interest stifles very often that of humanity.

This induces me to say a few words on an article which each of you, I am sure, possess—tooth brushes. Each hair of them may be considered as a tooth-pick, the daily use of the brush cleans the teeth and the gums, and saves them from many diseases. Brushes vary a great deal in their form, that is why you must choose them. For children they must be straight and very soft, for adults they must be so much the less hard as the gums are softer. For instance, if you select a hard brush you erase thus the enamel in some ways, you lacerate and bleed the gums, you uncover the non-enameled substance of the teeth, they will totter, sensibility will ensue, and afterwards the toothache.

An article everybody should possess is a tooth-pick. It must be used only when a few particles of food are driven between the teeth, which they annoy when they cannot be taken off in spite of the efforts of the tongue. That is the only circumstance when we can rationally recommend the use of a tooth-pick. The teeth and gums should be tormented the least possible with that instrument or any similar object.

There is still another error which I must note. It is the use of the end of a penknife as a tooth-pick. By that process a few blades of the enamel are exposed to be cut off, and unfortunately those occurrences take place and caries acts in that place. Next, are you always sure that the blade of your knife is clean? This is again a very delicate matter, because while cleaning your teeth with that instrument you can wound the gums and bring on an inflammation. The best tooth-picks are not made from gold, silver or steel, but those which are manufactured from quills.

Formerly sponge and cotton plugs were used for cleaning the teeth—this habit was far from being suitable for keeping the mouth clean—they had the same disadvantages as the linen of which I have already said a few words. Independently of the hygienic care required by the teeth, there some other precautions to be taken in order to preserve the beauty and soundness of those organs, and those precautions consist in avoiding carefully all that is injurious or may become so. As there are many I shall select the most remarkable, and I will be as short as possible.

1st. You must avoid washing your head in water too cold or too warm, using those astringent and caustic remedies to remove freckles, or dying the hair.

2d. Not to break with your teeth too hard objects, or cutting threads or any other thing with the *incisive teeth*, for they become notched and decayed.

3d. Never leave particles of food in these organs, nor use too hard dentifrice powders, or elixirs, tinctures too much acidulated.

4th. While eating, avoid taking food or beverages too warm or too cold, because the sudden transition between those two extremes is always injurious to the teeth. *Frigidus inimicum dentibus*, said Hippocrates with reason. When we smoke a pipe or cigar, the mouth is warmed, the larynx becomes dry, and then you drink—and even sometimes very cold water that may cause a slight inflammation of the dental pulp.

5th. Be very careful when drinking mineral waters, for they can irritate them, render them painful, make them turn yellow, and give them a dark covering.

Abstain from sweet things: a proof that they are injurious is that I have met in my practice confectioners, still young, whose teeth were nearly all *carious*. Druggists come under the same heading, because frequently they are obliged to taste their preparations, acid or sweet.

A thing that is very often done and about which we are careless, is drinking in the same glass as another, or smoking from the same pipe—

that is far from being clean. It occurs often that an impure saliva left on the edge of a glass, poisoned those who drank from it afterwards. Sailors are less particular, when their officer calls them while they are enjoying the comforts of a *chew*, they don't care about handing it to a comrade who masticates deliciously before returning it to its proprietor.

6th. Do not be great lovers of crackers and biscuits, they always contain acid powders. Americans have generally very bad teeth—we may say that they are the greatest biscuit eaters of the world.

7th. Abstain as much as possible from the use of gaseous waters, such as soda, which is relished so much in the hot season—it is acid, since it is composed from tartaric acid and bi-carbonate of soda. Ice-cream is also very injurious. As to myself I must confess that I am a great lover of it; do what I tell you and not what I do, as a proverb says. Salads are unwholesome: notwithstanding, taken seldom and in small quantities, they can stimulate appetite and facilitate digestion.

8th. Feats of strength performed with the teeth are absurd; those who indulge in them ought to be punished like that youth, who, says Dr. Lemartic, broke all his front teeth, who bet that he would throw over his head a chair which he held with his teeth by the upper part of the back board to achieve that noble feat. Another fellow, more imprudent, caused himself to be hoisted up from the ground to an elevated window by means of a rope which he held in his teeth. When he had reached a certain height he lost his four insisors and broke one of his legs in the fall. Some others, says the same Doctor, find pleasure in grinding drinking glasses between their teeth and wounding their mouths grevious-ly in the attempt—one would suppose that the life of these maniacs is a perpetual challenge to the Almighty who gave it to them. The loss of a tooth is a real misfortune since it cannot be repaired. A tooth is worth a diamond says one of our authors. Remember these few words, gentle-men, and try to put them in practice, and when old age will come, your teeth will still be handsome. If you do the contrary your cheeks will sink in, your lips will loose their firmness and embrossment, your chin will be lengthened, wrinkles will cover your face as so many furrows, pronunciation will be difficult and unpleasant, the saliva, having no more dikes to contain it, will escape, and produce that unpleasantness which we hardly endure in old persons.

Before concluding, I must tender you my best thanks for your kind attention. I have endeavored as much as possible to be brief and varied, to avoid the aridity and monotony which are usually found in medical works, where one's health is treated in a grave and doctoral style; I am satisfied after saying only what could be useful. I will be doubly

rewarded if I succeed in giving some credit to this essay, and in deserving a smile of approbation from those for whom I undertook especially to compose it.

OSSEOUS TUMOR UNITED TO A MOLAR.

BY W. G. BEERS, L.D.S.

The accompanying illustration, though poorly engraved, represents an hypertrophy of the cementum, united to the first inferior molar, left side, and which was removed from the mouth of a young nun, aged17, at one of the Convents in Montreal.

The tumor had been gradually increasing in size for some years, without causing any pain until a few weeks before its extraction, when a dull ache was felt, similar to that connected with periodontitis. There was no perceptible discharge, or tenderness, to speak of. The tumor distended both the inner and outer sides of the alveolus, and disfigured the cheek. The crown of the tooth was perfectly sound and well developed. A section of the tumor showed it to be cementum. Weight, seven and a half pennyweights. Evidently the entire external surface had been covered by healthy periosteum, which, doubtless, secreted the osseous element during the period of the development of the cementum.

DISCOLORED TEETH FROM OXY-CHLORIDE OF ZINC.

BY X. Y. Z.

I had one bottle of oxy-chloride of zinc some time ago, which gave me considerable trouble. In every case in which I used it, it turned the tooth from a light brown to a black. In three instances, in which it discolored a part of the teeth, I removed it, where it was placed over exposed pulps as a temporary filling, and found the pulps alive and healthy. The question in my mind is, "What was the cause?" Possibly it may be traced to some admixture of other metals than zinc, or some impurity in the latter.

En passant, I hold it as necessary to keep oxy-chloride of zinc tightly corked as chloroform. It deteriorates from exposure in the dry state to the air. I prefer very much the oxy-chloride of zinc prepared by Dr. J. H. Smith, of New Haven, Conn.

PROCEEDINGS OF DENTAL SOCIETIES.

BOARD OF EXAMINERS: DENTAL ASSOCIATION OF PROVINCE OF QUEBEC.

A regular meeting of the above Corporation was held at Dr. Bernard's office, Montreal, on the 1st and 2nd of May. Present, A. Bernard, J. McKee, C. Brewster, P. Baillargeon, J. H. Webster, J. A. Bazin, M. Pourtier, E. Lefaivre, W. G. Beers. After the usual routine business, the notice of motion given at last meeting to reduce the price of Licenses to Dental Graduates was brought forward, and after considerable discussion withdrawn.

An application from London, England, for the License, on payment of the fee of $50, was unanimously rejected on the following resolution: "Resolved, That the License for this Province is not for sale: this Board considering it contrary to the interpretation of the Act of Incoporation, to grant its License to non-residents of the Province of Quebec without personal Examination."

On motion, Mr. C. S. Strickland, who intended removing to Montreal, to be associated with Dr. Bernard, was granted a permit to practice until he could present himself for examination at the next meeting of the Board.

The Secretary reported that only one Dentist practising in the Province had so far failed to take out his License, but had promised to comply during the month. Several "raiders" in the country had disappeared, and efforts were being made to supply some vacant frontier districts with reliable practitioners.

Two candidates applied for examination. Mr. J. T. Macpherson, late of Lancaster, Ontario, passed a very thorough examination on both days in Dental Anatomy, Physiology, Chemistry, Pathology and Therapeutics, Filling Teeth, Surgery, Mechanical Dentistry, Irregularities and Anomalies, Anæsthetics and Hygiene, filling a cavity with gold in presence of the Board, &c., and was granted a License to practice Dentistry in this Province. We understand he intends settling in Huntingdon. One candidate after an impartial examination, was rejected.

QUEBEC (PROVINCE) DENTAL SOCIETY.

BY L. J. LEBLANC, L.D.S., SECTRY.

A regular meeting of the above Society was held at the office of Mr. Beers, on the evening of the 2nd May, Dr. McKee in the chair.

Through some informality at the last meeting, the election of officers

which then took place was declared illegal, and therefore null and void; several having been elected officers who were not constitutionally members.

H. D. Ross was re-elected President, L. J. B. Leblanc, Secretary, and J. H. Webster, Treasurer.

Most of the time was occupied in examining and discussing new instruments, specimens of Pyroxyline Base, &c. A handsome rosewood Butler chair, costing nearly $300, delivered, was on view, and attracted much attention, though it was considered that several of the movements were rather expensive luxuries. A magnificent lot of Dental Instruments for the inspection of the Society from S. S. White, Esq., Philadelphia, was exhibited, and elicited a great deal of satisfaction. Among the lot there were Jack's double end chisels, Head's excavators, Abbott's chisels, Atkinson's Omega mallet pluggers, Abbott's mallet pluggers, Wetherbee's chisels and spoon excavators, Palmer's nerve cavity instruments, Butler's mallet pluggers, Abbott's scalers, &c. A vote of thanks was passed to Mr. White for the opportunity afforded of viewing the instruments. Messrs. Codman and Shurtleff, of Boston, exhibited their indispensable saliva pump, and Dr. Moffatt's hot air syringe, and mouth syringe. A new inhaler for nitrus oxide, from M. M. Johnston and Co., was also shown.

Some discussion arose on the question of dental show cases, and professional fees and advertising, and the following resolution was unanimously passed, "Resolved, That this Society, representing the Dental Profession of the Province of Quebec, regard all dental advertisements as unprofessional, which draw attention in any way to special methods or modes of practice."

CORRESPONDENCE

Mr. Editor,—In my article on extracting teeth, in the March number, I cited a case of replantation, and promised, if successful, to give some further account of it. It is now three months since the operation, and my patient reports the tooth *sound*, and thinks it would require the same effort and cause as much pain in having it extracted as at first. My opinion is, that the mode adopted by Mr. Coleman, and which you say you adopted, is quite too scientific; there is too much doctoring. I attribute my success, in a measure, to the fact that, in the absence of carbolic acid (being at my residence at the time) I used warm soap suds freely. I am an advocate for the use of carbolic acid, and use it incessantly, but *spar-*

ingly, and very much question its *free* use in cases under consideration. I will not, however, condemn the practice, but wait to learn more. I am anxious to test replantation further, but no favorable cases have come to hand except one, and, being a cuspid, the crown was fractured in extracting, and I did not deem the attempt advisable.

G. V. N. Relyea.

Belleville, April 10, 1871.

St. Paul, Minnesota, April, 1871.

Mr. Editor,—Being acquainted with the greater number of Ontario dentists, and occasionally receiving and highly enjoying the able productions of their indomitable effort in dental research (through your valuable journal,) I would crave a small space (for their amusement at least) to state a few facts respecting dentistry out *West*. On coming to this Western country I was agreeably mistaken, for I supposed that the people in their eagerness to acquire a home—make money—and endure the hardships and privations of a new country, would forget or neglect the services of a dentist, and that nothing but an aching tooth could possibly remind them of such a personage; however, I found that every town and some villages had their dental practitioners, and that the cities were (seemingly) over-supplied. I looked over the state, and found no place holding out better inducements than *Saint Paul*. With a mixed population of 20,000 our specialty was represented by seven practical workmen, four of whom had been located here upwards of twelve years, and had grown with the place and in the affections of the people. I plainly saw that no easy task was before me to gain a position among so many able *confrères*. I located, hung out my shingle, and am endeavoring by good work and perseverance to be as one among them. We have first-class men among us—four D.D.S'.,—who do their work well and are remunerated accordingly. The minimum price for gold fillings is $2.50 up to $30; very little of other and baser fillings is used, for filling with such is $1.50 to $4. For extraction $1; for artificial indentures $25 upwards for upper or lower set. There is not so much extraction and mechanical or manufacturing work done as with you, but more attention is directed to the saving of the natural organs; almost every tooth is saved; people are alive to the constant care and proper attention to their teeth. The intelligent American feels it to be as imperative a duty to present himself to the dentist for an examination of his teeth, polishing and filling, if need be done from time to time, as he is to employ a physician to subdue a fever, when premonitory symptoms appear. In this way the standard of

our noble profession is being elevated, and the people are appreciating and educating themselves in their special wants in respect to dentistry. Here is a noble opportunity to us, as dentists, to perform mission work, in not looking so much to the dollars and cents, but to the best interests of society, by correctly informing the minds of our patrons and, if need be, writing essays on the cause and effects of carious teeth, the remedy, &c., &c. Yet, among all these favorable aspects to our specialty, there does exist some deplorable things; there is not that warm fraternal feeling existing among dentists as with you in Ontario and Quebec and some of the Eastern States; no laws regulating the practice and stopping charlatans and quacks from deceiving the public and bringing the honored profession into disrepute. The great cause lies in the fact of an unwillingness to confer with each other. We do need organized societies and associations, a fraternal feeling, a willingness to impart information, to counsel and advise with each other over our failures and successes. None of these things exist here. There are practitioners here who never call upon their brethren. I felt it my duty to call upon each one, and with happy results, for my call has been reciprocated by all but one, and that one a promise. It requires but a little time on our part, and if a right spirit is manifested by us, how perceptible is the effect upon our brethren. Then why not break the barrier and let a cordial, reciprocal feeling be shown one toward the other? And now, Mr. Editor, I have taken up much of your valuable time and paper, and, in closing, permit me to say that the *Canada Journal of Dental Science* comes to me as a highly prized book of information, and I presume every dentist in Canada is a subscriber; if not, he ought to be, to it, or some other dental journal, so as to keep pace with the profession.

J. H. Bryant, L.D.S.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—FEB. 6TH, 1871.

[We cannot, properly speaking, place the O. S. G. B. in the list of *foreign* societies, belonging, as it does, to the Empire, of which we in Canada are proud to form a part, but we will include it in the "Epitome" for convenience sake.]

The following is an extract from an interesting paper, read by Mr. Thos. C. White, "On some Points in the Minute Anatomy of the Pulps of the Teeth:"—

"Twelve years ago he commenced an investigation into the minute

anatomy of the pulp of a tooth and its connection with the dentine, with a view of ascertaining the agency by which those painful sensations were conveyed to the sensorium, which were sometimes excited by cutting sensitive dentine.

Of the structures of the teeth the dentine constitutes the really vital, as well as the main body of the tooth, with its myriads of tubuli, whose mouths open on to, and help to make up the walls of the pulp cavity; the tubuli radiate outwards, diminishing in size as they proceed, and at last inosculate with adjoining tubes to form an irregular system of loops. This is the element in the tooth to which we wished especially to call their attention, because it is in this tissue that the sensitiveness alluded to manifests itself, and particularly in that part where the tubes form loops with each other, the elements of temporary teeth being exactly the same as the permanent teeth, and the former being more readily obtained in a sound condition.

The teeth chiefly used in these investigations have been the temporary canines, the pulps of the incisors generally presenting a semi gelatinous state not favorable to their removal from the cavity of the tooth. The course of procedure adopted, is as follows:—A longitudinal groove being made round the tooth with a file, and the *débris* thoroughly washed away, the application of the cutting nippers to one end will split the tooth cleanly in two, and the pulp may then be withdrawn by firmly seizing it with dissecting forceps at that part where it enters the apex of the fang, and then, peeling it out of the pulp cavity, so as to draw it away with all its attachments, it may be laid on a glass slide under the microscope, and examined with a half-inch objective.

A pulp under the microscope often appears full of bubbles; how this occurs is a problem he would be glad to have solved, as it prevents the examination of many otherwise eligible pulps. He had tried to obviate the difficulty by throwing the teeth immediately after extraction into water or glycerine, but still the air, by its presence, causes all the histological elements of the pulp to become lost in the froth that fills the tissue.

Another difficulty arises from the presence of myriads of nodules of osseous deposit—the Calcification Islands of Salter. They are structureless masses of matter resembling gum arabic, of varying size and shape, the prevailing form being spindle-shaped, with the long axis corresponding to that of the tooth. They are most abundantly supplied to the lowest portions of the pulp, but, nevertheless, by their thickness, they prevent that compression of the pulp necessary to make it thin enough for examination with the higher powers of the microscope.

If a pulp free from these drawbacks be examined, we shall notice an appearance differing only in colour from that presented by a section of dentine taken transversely to the course of the dentinal tubuli; we shall see a number of round bodies, whose diameters would correspond to the conjoined diameters of the dentinal tubes and the walls immediately surrounding them. This is the view taken from looking at the ends of these bodies; this is an important point in understanding the relation of these bodies to the dentine covering them.

In investigating the minute anatomy of the pulp, we have to apply certain staining fluids and reagents; and he had derived great assistance from the use of the ammoniacal solution of carmine, used so successfully by Professor L. S. Beale in his researches. The formula for the preparation of this fluid may be found in his valuable book 'How to Work with the Microscope,' p. 201. This fluid has the property of staining all *living* and *growing* parts of a tissue, while those that are *formed* are not affected by it: thus, in staining a tissue with this fluid, by allowing it to soak in it for a few hours, and, after washing it in glycerine, examining it with a microscope, the nuclei of that tissue will be found stained a deep crimson, the nucleoli will be a dark red, while the surrounding structures will be almost colourless; thus making the *active* and *living* parts distinctly manifest from those which are already *formed* and *passive*.

In a pulp left twenty-four hours in this solution, then washed and placed in glycerine under compression, we shall observe that the round bodies, described as covering the external surface of the pulp, are stained of a deep crimson, and the side aspect presented, in consequence of the pressure, will reveal that their form is oval; that they are stained so deeply is an evidence that they are not *formed* material, but that they have an office of a *growing* and *active* character. Upon seeing these he named them "the germinal corpuscles," from the belief he entertained that they were the dentine-forming organs. They are the odontoblasts of the German histologists.

Further compression will cause some of these odontoblasts to start out from the ranks of the rest, and they will be seen to have a connection with the pulp by means of a very pale, slightly granular fibre, running into and losing itself in the fibrous substance of the pulp. Upon carefully examining the distal extremity of the corpuscle, the remains of a similar fibre may be detected running in the direction of the dentinal tubuli; the compression renders the course of the dental nerve slightly perceptible through the separate bodies of the corpuscles. If the pulp be placed in a very diluted solution of liquor sodæ and glycerine, the germinal corpuscles will be dissolved away, and a clear unobstructed view of the

course of the dental nerve will be afforded. Entering at the apex of the fang with the vessels is a tolerably large bundle of fibres, after passing a short distance into the pulp, it becomes divided and subdivided, till a single pair of fibres may be traced to all parts of the pulp. Their course is at right angles to the longitudinal axis of the germinal corpuscles, and to the course of the dentinal tubes; this is further evidence that the pain of sensitive dentine cannot be conveyed by direct contact with the ultimate fibres of the dental nerve, but through some intermediary agent.

He had had few opportunities of confirming the supposition that the nerves and their terminations end in loops, though there are sometimes faint indications of such loops having been ruptured by the compression necessary for investigation. The artery at first runs parallel with the nerve, branching off into a network of capillaries, and becomes distributed throughout the pulp, where, at the periphery, its branches run in close proximity to the bases of the germinal corpuscles.

Three kinds of nuclei, besides corpuscles, are found in the stained pulp—the fusiform nuclei of the areolar tissue, the nuclei of the nerves, and of the artery, all differing in form and dispositions.

The germinal corpuscles clothe the external surface of the pulp, and stand closely side by side in a dense phalanx, with their long axes at right angles to the surface on which they stand. The fusiform nuclei of the connective tissue are spindle-shaped, and occupy the substance of the tissue. The nuclei of the artery are arranged transversely to the course of the vessel, somewhat spirally, occupying the muscular coat of the artery, and are of an oval shape. The nuclei of the nerve-fibre are of an irregular longitudinal character, and occupy the substance of the nerve.

Coming now to the dentinal fibrillæ of Mr. Tomes, we find them very transparent, and of a semi-gelatinous character. They are so minute as to be visible only with a moderately high power and careful adjustment of light, but are easily demonstrated by decalcifying the section of a recent tooth, and tearing it transversely to the course of the dentinal tubes, when the fibres may be seen as a fringe along the fractured edge of the section projecting from the tubes. By a careful examination of the microscopical characters of these fibrillæ, we shall be brought to recognise in them a relation to the fibres attached to the germinal corpuscles at the orifices of the dentinal tubes. These fibres are the organs around which they deposited the dentine; they retain a low kind of vitality, and are capable of inducing change in the structure they were the agents in forming, although in a slower manner than would take place in the other bony structures of the animal frame.

We see now, in the dentine, an agency by which the vibrations of con-

tact, whether of irritant fluid or of an instrument, can be transmitted to the pulp, but have yet to learn how these dentinal fibrillæ communicate with the dental nerve and its branches. He had endeavoured, but hitherto unsuccessfully, distinctly to demonstrate the union of the dentinal fibres with the nerve. He could only conjecture that these fibres, after leaving the bases of the germinal corpuscles, enter the fibrous tissue of the pulp, and become fused in the outer coat of the nerve. From the above glance at these elements in the dentine and pulp, it will be seen how desirable it is that the treatment of exposed pulp by escharotics should be limited to exceptional cases, and every endeavour made to save the pulp in its integrity. When, in the fœtal life of the dentine, this tissue is represented by only a thin covering, crowning the summit of the pulp, the germinal corpuscles are at their more active stage of vitality, and continued so till the cavity was reduced to its usual calibre, when the osteogenetic powers of the pulp became dormant. The formation of secondary dentine against advancing caries shows that these powers only remain in abeyance, and do not become defunct. Examination of secondary dentine will show that an agent governing the formation of the primary dentine has been in active, but more irregular, operation in the new structure, as the dentinal tubuli in the secondary dentine are continuous with those of the original tissue.

He conceived that the formation of the secondary dentine takes place upon this plan—the pulp cavity, having arrived at the usual size, the corpuscles remain in close contact with its walls, and are dormant, but when any source of irritation wakes them up, they recede from the old dentine, take up an active existence, and deposit the secondary dentine, drawing it after them as they recede into the centre of the cavity. This view warrants us in coming to the conclusion, that in the pulp there exists an internal prolongation of the caudal appendages of the germinal corpuscles dipping down into the tissue of the pulp, while the external appendages, constituting the dentinal fibrils of Tomes, occupy and govern the dentinal tubuli.

If, then, this internal caudal appendage passes into and becomes fused with the dental nerve, we have an explanation of the method by which the pain arising from contact with the excavator is transmitted to the nerve; and if the view he had endeavoured to give them that evening, of the nature of the various elements in the tooth pulp, commended itself to their intelligence, he was hopeful enough to believe more would yet be done to advance the interests of conservative Dentistry than ever yet has been tried."

Mr. Coleman thanked Mr. White for his paper, and said he had worked

on the same subject; his preparations had been made chiefly from the teeth of the calf or adult human teeth removed before the development of the fangs had been completed Immersing them directly on removal in Dr. Beale's staining fluid, he had not had trouble from the access of air through the dental foramina. In some of these sections, especially of the calf, he believed, but could not feel certain, that he could trace distinct communications between the nerve-fibres of the pulp with odontoblasts on their cell-walls.

Although communication between the nerve-fibres of the pulp and the dentinal cells would explain the cause of sensitiveness in dentine, he did not consider it absolutely necessary to have in all cases a direct communication between fibre and sensitive part before assuming that impressions could be conducted from that part to a nervous centre. This is not insisted upon for the transmission of forces analogous to that denominated nerve-force. Impressions received by the long process of the odontoblast might be conducted from these bodies through the numerous cells intervening between them and the nerve-fibres, or possibly the connective tissue of the pulp performed this office.

He was inclined to look upon odontoblasts, not only as concerned in the development of the dentine, but as comparable to the tactile corpuscles, Paccinian bodies, &c. Many physiologists insist that all special sensations are received first through special organs, and he considered that teeth were not intended merely to comminute food, but, by their sensitive nature, to determine whether the substance so comminuted, as, for instance, a piece of cinder in a biscuit, would be injurious, or at least irritating or not.

A consideration of the source whence the parts concerned in mastication receive their power of sensation and stimuli to action would give us more insight into the truly reflex process of mastication, and enable us to understand how individuals, having only two teeth in the head meeting each other, can fairly comminute their food, though taking longer to do it. He thought the teeth were endued with sensitiveness to enable them to fulfil such functions, but how the sensations they received were conveyed to the nerve-centres was another question, and he only conjectured that the odontoblasts were the organs for receiving those sensations.

The subject was surrounded with difficulties, for even if we could trace communications between nerve-fibres of pulp and the odontoblasts, and thus explain the sensitiveness of dentine, we have to account for those paradoxical cases described by Mr. Salter, in the "Archives of Dentistry," where sensitiveness was observed in dentine cut off from all communication

with the dental pulp, except through the lateral branches of the dentinal canals, into which as yet no prolongations from the long processes of the odontoblasts have been discovered. Also, in cases, where the fang of a tooth, which had been cleared for grafting, was sensitive on being scraped, though this might be explained by supposing the sensations to be conveyed along the processes of the odontoblasts to the nerves of the periosteum.

Mr. White thought Mr. Coleman overlooked the fact, that the periosteum being largely supplied by nerves derived from the same source as those which supply the pulp, and the periosteal surface of the fang being perforated by numberless channels, nerve filaments may enter from the external nerve supply, and so transmit the sensation as easily through the more direct agency of the nerve-fibres of the pulp.—*British Journal of Dental Science.*

SELECTED ARTICLE.

PULP TREATMENT.

BY HENRY S. CHASE, M.D., D.D.S.

To Students and Young Practitioners.

An inexperienced young dentist asks my advice on the above subject, and as there may be others seeking the same information, I write what I have to say for the Journal.

EXPOSED PULPS.

If a pulp is exposed in the process of excavating, it should not be destroyed, but efforts made to preserve it alive. To this end, touch it with a pellet of cotton, wet in creosote. Then remove all the decay within the cavity that is possible to do without further wounding the pulp. It is better to leave a little softened dentine over the pulp, rather than to run much risk of wounding that organ again.

A broad and very sharp excavator should be used when working over the pulp, as it is not so likely to cut through and wound it as a smaller blade. Prepare the cavity very nearly or exactly as you wish it to remain when the tooth is permanently plugged. This must be determined by circumstances.

The cavity should now be plugged with *Oxychloride of Zinc* or *Osteo Plastic.*

To do this, turn out on a piece of glass or porcelain enough of the liquid to fill the cavity, then drop into it enough of the powder to absorb

the liquid. While it is in this soft batter state, and before it begins to harden, put a portion into the cavity, pressing it home gently with a bit of spunk; the spunk will absorb the surplus liquid. The operation may be repeated untill the cavity is full. The tooth should be perfectly protected from saliva during the insertion of the filling, and also during its hardening. After it is filled, and before getting wet, the surface of the plug should be smoothed and then coated with sandarach varnish. After allowing the latter to dry a moment, the mouth may be shut, and the varnish on the plug will protect the latter from moisture, and the oxychloride will harden nicely. If it is convenient to do so, this plug should remain in the tooth a year. If it is on an approximal surface it will probably wear that length of time, but if on a grinding surface it will need to be mended, by adding more material to it, after a few months. In some cases the pulp will die, thus treated, but in a great majority of cases it will live in a healthy condition. Sometimes it will live for months in a *dying* condition. The object of deferring plugging the tooth with gold, is obvious enough—we wish to be pretty sure of its continued health before putting in a permanent plug.

Very likely there will be considerable pain when the osteo is first inserted for a half-hour, or even for a half-day.

The less pain, the more favorable the prognosis. If the pain should continue several days growing less and less, you must not suppose the tooth is out of danger, for really it may be in a more dangerous condition than at any time previous—*the pulp may have died.*

You must find out whether this is so or not. Throw a small stream of cold water on the tooth from a syringe, and, if it is alive, pain will be felt; if the pulp is dead there will be no response. If the pulp *is* dead it must be removed from the crown and *roots* of the tooth, otherwise periostitis and suppuration will probably follow, resulting in alveolar abscess.

If the pulp continues healthy for several months, there will probably be new dentos* formed between the plastic plug and the pulp.

When it is decided to plug the tooth with gold, it is better to leave some of this oxychloride of zinc over the pulp, and in such other parts of the cavity as may be deemed desirable, never, however, allowing this material to come to the edge of the cavity. This plastic filling, when well put in, is often found to be as hard as the tooth *within* the cavity, and I occasionally leave a considerable portion of it in the tooth, and sometimes make retaining points in its substance.

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* Dentos—Tooth-bone.

When we have

A CASE OF EXPOSED AND INFLAMED PULP.

the treatment must be different.

If there has been repeated inflammation of the organ for months, there will have to be considerable treatment for its restoration to health, before it should be plugged with *anything*. The inflammation must be reduced by using aconite tincture and creosote. If portions of the pulp have sloughed, it will be better to destroy the remainder with arsenic, and remove it entirely, when the roots should be plugged.

TO DESTROY THE PULP,

lay upon it, or as near to it as possible, within the cavity, a little arsenic which has been ground in creosote. The arsenic should not exceed a sixteenth of a grain in weight. Secure it in place by filling the cavity of decay with a pellet of cotton wet in sandarach varnish. Let this remain twenty-four hours. Remove the cotton and ascertain if the pulp be dead. If it is not dead you may wait a day or two, and if it is not then dead, apply the arsenic again. When dead, fill the cavity with tannin paste, that is tannin that has been dissolved in alcohol until the alcohol will dissolve no more. Seal the cavity with sandarach varnish as before, and let it remain ten or twelve days. By this time a slough of the pulp will have taken place at the end of the roots, and the whole of the pulp and its ramification may often be drawn away at once. The tannin keeps the pulp from putrefying while it remains in the tooth. If attempts are made to extract the portions of the pulp which occupy the root canals, *immediately* after devitalization, there will be a good deal of pain experienced by the patient and a good deal of difficulty by the operator. My experience is altogether in favour of the *waiting for nature* process; in the latter there is generally *no* pain. The root canals are now to be syringed out, and the cavity of decay thoroughly prepared for filling. I should have said that the dentos separating the pulp chamber from the cavity of decay should be removed, so as to have the best possible access to the root canals. The latter, at their entrance into the main pulp chamber, may be somewhat enlarged with any instrument that will not leave a *square* shoulder at the distal extremity.

A good deal of skill and experience is sometimes required to properly expose the orifices of the root canals, so as to remove their contents, and I cannot stop now to describe the manipulations sometimes necessary, as it would require several pages. Suffice it to say, however, that it is sometimes necessary to *make another cavity* in the crown, or cut away considerable portions of the latter, in order to give proper access to a root canal.

The condition of an empty root canal and pulp chamber is better than when those cavities have dead pulps in them. But an *empty* chamber and canals will cause a tooth to become diseased after a time, probably by receiving more or less of blood-plasmas through the dentinal tubes, which become putrid, and act in the same way as a dead pulp in causing pericementitis.

Exceeding care, then, should be used in

PLUGGING THE ROOTS.

This may be done with gold, or with osteo plastic.

When done with gold we must ascertain whether the plugger will reach as far as we wish to carry the gold. If it will enter the roots only a portion of the distance we need not hope to send gold beyond that point. Small portions of gold only should be used at a time, and that should be *un*-adhesive gold. Sometimes a plugger may be made of whalebone that will, by adapting itself to curvatures, carry the gold farther than a steel instrument. One can be made for each occasion.

These whalebone pluggers should always be used when the roots are plugged with osteo plastic. As to this latter substance, I have had better success with it than with gold.

I do not know of periostitis or alveolar abscess ever having occurred when I have plugged the roots with oxychloride of zinc.

Make a whalebone plugger by cutting and scraping down until it will pass as near the end of the root canal as possible, and mark on the plugger the distance at which it entered the cavity. Fill the canal with the oxychloride as well as possible. Cut off the plugger, and force it into the canal, and leave it there. When forced home it should not quite reach the pulp chamber.

The whalebone presses the osteo against the walls of the canal, and makes a filling in the majority of cases more perfect than gold; it also acts as an escharotic and deodorizer, and I think is much better adapted to the purpose than gold foil. The whalebone is as safe as gold within the tooth.

In all cases where we suspect pulp death, after a tooth has been plugged having a *living* pulp, we must ascertain the fact, and, if our suspicions are confirmed, we must remove the pulp, thoroughly cleanse the cavity with warm water, and fill it with tannin as before described. This should be removed at the end of a week, syringed again, and plugged as tightly as possible with cotton and sandarach. When the cavity is found to be free from unpleasant odor, the crown may be plugged with oxychloride for a month or two as a *test*. If there are no symptoms of

periostitis at the end of that time, the roots and crown may be *permanently* plugged.

Teeth, whose dead pulps have a long time been connected with an open cavity of decay, are very prone to take on pericentitis when shut up by a plug; for this reason the foregoing precautions are highly necessary.—*Missouri Dental Journal.*

BIBLIOGRAPHICAL NOTICE.

Scribner's Monthly.—After the professional man has subscribed and paid for a journal relating to his own business, he is in duty bound to take one for his patients, or his family; and we know no better than *Scribner's Monthly*, conducted by Dr. HOLLAND, the popular author of "Timothy Titcomb," &c. It is issued monthly; each number is finely illustrated, and contains graphic pictures of life and character. It is evidently destined to take *the* leading position among American periodicals of its kind.

Uterine Catarrh frequently the cause of Sterility. New Treatment. By H. E. Gautillon, M.D. Boston, Jas. Campbell, Publisher, 18 *Tremont Street.* 54 *pages. Price* 50 *cents.*

The above is an English translation of a pamphlet on the diseases of the womb, and the treatment of uterine catarrh, by intra-uterine injections. As we have now a large number of physicians on our subscription list, we notice the publication of the above *brochure* for their benefit.

EDITORIAL.

THE LAST RESORT. AN EFFECTUAL ONE.

In spite of everything done to elevate a certain class of dentists in Canada who got into the profession before legislative action could prevent them, and who have been offered every advantage to be obtained by becoming members of the Associations, and witnessing clinics, a number still hold back from communion, and are positively greater quacks than ever. So long as they could get any personal advantage from the Societies without being asked to abolish their show-cases and other semblances of charlatanism, they continued regular in attendance. They were willing to share in any advantages and protection offered by the acts of corporation, and the connection with the societies, but they would not assume any responsibility, or give way in the least point from the orthodox track in which they had been moving. Their gratitude for the friendly conciliation shown them by respectable members of the profession, who zealously aimed to *educate* and elevate them out of the mire—and which succeeded with one or two so as to console the movers

for the experiment—was shown in utter contempt for improvement. They have the candor to admit to their compeers their poor abilities, while they extol them to their patients. They are as meek as a six-weeks lamb when they are face to face in the societies, but bold as lions to their simple patients. They trust to the conciliatory good will of the former for their safety from exposure, and to the ignorance of the latter for their success in practice.

The question arises, "What is to be done in the interest of the public and the profession?"

We disclaim from this time all further attempts to conciliate and urge these parties to abstain from quackery, and disgraceful means of attracting attention to themselves; and we urge a zealous and prompt demand by the societies to which they belong, either for compliance with their rules, or to suffer expulsion. We will go on conciliating for half a century, until dentistry in Canada will be so degraded that the quacks will be its only practitioners. Those who have come out from the disgrace deserve credit; those who will not do so now, will not at all.

What is the "perfect cure?" *Educate the public* to know the difference between good and bad dentistry and the dearness in the long run of the "cheap dentists." It is very easy to say "educate the public" but how is it to be done? By means of the Press! The plan we would suggest is this. Let a plain practical letter be written stating facts illustrative of the imposition practised by incompetent dentists, and the injury done to the teeth and the general health. Point to the indiscriminate extraction of teeth, indiscriminate and ignorant use of a dirty amalgam, and slovenly use of gold; neglect of regulating teeth, and the various particulars in connection with artificial teeth. Avoid personalities, but give authentic facts and cases from the practice of quack dentists without mentioning their names. Let this letter be sanctioned by the various dental societies in Canada; then published in this Journal, and also sent on slips to every English and French paper in the Dominion, to be inserted as correspondence. The matter being one of public interest and the letter sanctioned by official authority, can scarcely be denied insertion. At the same time request each editor to draw attention to the matter, as fully as possible. As soon as this official letter appears, let one or two respectable dentists in each locality follow it up by judicious statements in the press of further facts to the point, avoiding personalities and names. In this way a public interest will be awakened. Further, let the dentists wherever this letter appears, apply immediately on its insertion to have a number struck off on neat sheets of paper to distribute gratis to their patients.

Since writing the above a confrere suggests that we undertake to draw up the proposed letter, and that the several dental societies in Canada be asked to contribute sufficient funds to meet the expense of postage, &c., which will be incurred in distributing the letters throughout Canada. We will endeavour to do it as early as possible, and ask our readers to forward us at once any facts and cases which may help to illustrate the imposition practised by the quack dentists of Canada. Their *dies iræ* must come, and the sooner the better. Let the purging be effectual!

The best way to make bad dentists better is to *educate* them. But if they scorn that, then the best way to protect the public from their imposition in to *educate the public*. B.

The Eighth District Dental Society will hold its next meeting at Buffalo, on the 9th of May. The meetings of this Society are of the most interesting character, and as we are requested to invite all our friends to attend it, we hope a large delegation from Canada will be present.

PHILADELPHIA DENTAL COLLEGE.

We acknowledge the receipt of a copy of the *Philadelphia Press* of 25th February, containing an account of the eighth Annual Commencement of the Philadelphia Dental College. Thirty-eight degrees were conferred, and we notice with pleasure the names of three graduates from Canada, viz., JOHN L. MACKEY, of Halifax, ROBERT H. STANSFIELD, Quebec, and JAMES B. WILMOTT, Secretary Royal College Dental Surgeons, Ont. The valedictory was delivered by the latter.

PENNSYLVANIA DENTAL COLLEGE.

This college also closed its fifteenth year in February. We notice the names of S. ZIMMERMAN and M. C. STEEVES as Canadian graduates of this year.

DENTAL SCHOOL OF HARVARD UNIVERSITY.

While in Boston, recently, we visited the above institution, and took much interest in the perfectness of its arrangements, the beauty of its locality, and the various auxiliaries convenient for the student.

THE OTHER COLLEGES.

The glorious old Baltimore, the New Orleans, Missouri, Chicago and Ohio Colleges have also wound up another season and all seem prosperous.

We call attention to the notice of "Ontario Dental Society," Page 23, advertisements.

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ORIGINAL COMMUNICATIONS.

NOTES ON OPERATIVE DENTISTRY, No. II.

(Continued from page 130.)

BY F. G. CALLENDER, L.D.S., TORONTO.

In connection with my previous remarks on the subject of Operative Dentistry, I will try and show some of the benefits to be derived from the use of the os artificial in the restoration of the natural teeth to health and usefulness.

It is most deplorable that with so much sacrifice and suffering, the teeth, under almost every stage of decay, are condemned and removed as worthless by the ignorant charlatan, (and too often by many who make greater pretentions), and replaced by artificial substitutes which are so ill adapted in size and color, as to be noticed even by the most careless observer.

Now I do not claim that all teeth can be permanently saved, but it is certain that a large majority of them may for years of usefulness, and I respectfully submit that even a few years' use of the natural teeth will amply repay for the trouble of restoration.

In dealing with frail shells of teeth the most important point is to secure support, and for this purpose I have found os artificial most invaluable. I first remove, as thoroughly as possible, all disintegrated dentine, syringe well with tepid water, in order to a most perfect cleansing of the cavity to be filled; or what is better still, to facilitate the work of cleansing, is the repeated washings with a rubber ball syringe; (an instrument I would hardly know how to do without during the process of excavating or drilling,) dry with sponge or lint perfectly. Mix the os to the consistency of thin paste, and introduce a small quantity to the bottom of the cavity, spreading it over the surface thin with

a ball of bibulous paper, pressing the paste to all parts of the cavity; the paper will at the same time absorb all the superfluous fluid. Repeat this process until the lost portion of the tooth is fully restored, and protected from moisture until hard.

I prefer to dismiss my patient for a few days, and sometimes even weeks or months, in order that sufficient time may elapse to fully test the strength and value of this support, and in case where disease had existed, and successfully treated, to give ample time for the recuperative powers to restore to a normal condition the part affected.

For this it is necessary that the filling from the commencement until perfectly hard should be completely protected from moisture. The most difficult, yet most important point, is the portion next to the gum. I am convinced that to neglect in this particular, the filling at that place never becomes hard, and when used as a protection to an exposed or nearly exposed pulp, is the cause of very many failures.

I have used as a protection to the pulp, during the past twenty years, everything which has been recommended by the journals, and many which have not been noticed, metallic and non-metallic; having success and failures with all; some from thermal irritation, some from want of medication, some, no doubt, from over-medication; some from want of time and proper medication; and probably as many from a want of a removal of devitalized portions, and small particles of dentine, and some, also, from pressure of fillings on the cap becoming an irritant, especially when the pulp has become enfeebled from long exposure.

For the past few years I have had the best success, from the use of a slight coating of gutta percha dissolved in chloroform, a cap of tin foil or lead very thin, and os artificial. With this protection very little if any pain is experienced unless from too great pressure in filling.

The protection of an exposed pulp, I deem important, according to the age and health of the patient, and the condition of the pulp itself, whether the exposure was of recent date, or had continued for some time a source of trouble, passing at times to a more or less congested, and not unfrequently to the suppurative stage, devitalizing the crown portion, and if not arrested, also destroying the fang portion, extending its influence to the periosteum, alveolus and gums. It can not be questioned that something is very much needed to enable young practitioners to diagnose correctly, and this can only be obtained through a thorough course of instruction, or by many years of experience.

The varied success of many who, during the past few years, have been making special efforts in this direction, are undoubtedly attributable to a want of proper information and practical training.

Others more successful have not only been encouraged themselves at the results, but have stimulated a large portion of the profession to meet the demands of an intelligent public, anxious for advice, and what is of more importance, practical proof in this attainment, which will ever secure their utmost confidence, and bring its richest reward.

Since writing the above, I have with great pleasure, perused articles in the *American Journal of Dental Science*, on inflammation of the dental pulp, which I trust is the beginning of a work very much needed on Dental Pathology.

DISEASE OF THE ANTRUM.

BY C. S. CHITTENDEN, L.D.S.

On the 30th August, 1870, a stout, sturdy Englishman called on me to have the roots of the left superior second bicuspid extracted. The face was most fearfully swollen, the swelling commencing about the orbital edge of the malar bone and extending downwards to a point a little below the alæ of the nose, and puffing out in the centre, much as if the half of an egg, cut latitudinally, had been placed under the skin. The surface was very hard and intensely red, the appearance being unlike anything I had ever seen before. I made a good many inquiries, from which I gathered that the swelling first commenced about seven years before, and had given more or less trouble ever since, but had never been as painful or as badly swollen as when he came to me. I also learned that on three or four occasions he had consulted physicians, who had opened the enlargement in the cheek, from which, so far as he knew, there had been no discharge but blood.

The gums were perfectly healthy, there being no inflammation about the roots of the bicuspid even. Suspecting disease of the antrum, I plied him with the usual questions, but failed to elicit anything from him that would lead me to decide positively as to whether that cavity were affected or not, and as I could see no other cause for the trouble, I decided to make an opening into it. For this purpose I extracted the roots, which were removed without difficulty, and then attempted to pass a small drill through the socket of the palatal root, but as it caused him a good deal of pain I desisted for a moment, and then inserted the drill into the socket of the buccal root and gave it two or three turns, when I found it had passed entirely through the bone. I withdrew the drill, expecting to see it followed by a discharge from the swelling; but, as nothing came away, I took a small probe and passed it through the opening made by the drill, and pressed it up till he asked me to stop, when I found on

measuring, that it had passed up an inch and a half from the edge of the gums. Still there was no discharge. I then took a fine excavator, the shaft of which was bent at an angle of forty-five degrees, and passed that up nearly as far as I had the probe, and rotated it sufficiently to break up any saccular formations within its reach, when fully half a teacupful of very offensive matter was discharged. When all had passed out that would do so, I injected tepid water into the cavity several times till it seemed to be pretty well cleansed, when I threw in a mixture of iodine and carbolic acid, and placed a tent, saturated in the same mixture, into the opening and requested him to call the next day.

August 31st.—Patient called according to appointment. Found the cheek distended nearly as badly as at first. On removing the tent nearly as much matter was discharged as on the day before.

I filled the cavity with the same mixture, placed another tent in the opening, and requested him to call next day, which he did. I continued to treat in the same manner for some time, with very little improvement. On probing the cavity carefully, I found that the external wall of the antrum was almost entirely eaten away, so that he could, by sucking, draw the cheek into it, leaving quite a depression on the outside.

On the 8th of September I resolved to try nitric acid, very much diluted, as an injection. Accordingly, I put three or four drops of the acid into a tumbler of water, which diluted it so much that there was only a slight sour taste to it, and injected a syringeful into the cavity every day for a week. From that time he improved rapidly, and in two weeks I discharged him cured. The opening into the nose was evidently closed, and he positively refused to allow one to be made there. So I could only do the next best thing, form an artificial one into the mouth, which I did.

HÆMORRHAGE. CASE IN PRACTICE.

BY W. H. WAITE, D.D.S., LIVERPOOL, ENG.

Two weeks back a lady presented herself for advice concerning severe neuralgic pains through the facial region on both sides. Examination of the mouth revealed the presence of a gold plate in each jaw, bearing a number of substitutes. All the roots remained underneath. The plates had not been removed for many months, and the accumulation of filth about them can be better imagined than described.

A thorough clearance of the diseased roots having been decided on as the best treatment, commencement was made with the lower jaw, right side.

Profuse hæmorrhage followed the removal of the first three roots, the blood not only jetting up from the bottom of the alveolus, but oozing from the free edge of the gum around each place. After a reasonable time had elapsed, and as no sign of abatement appeared, the remedy so highly recommended by Dr. Garretson, in his valuable book on "*Oral Surgery*," (pp. 237,) viz., a *strong solution of alum*, was resorted to, first to rinse the mouth, then each empty alveolus was carefully packed with cotton soaked in alum water, and the blood still weeping from the gum, a compress of lint saturated in the same fluid was secured in place, and in a very short time the bleeding ceased. A few days afterwards, another batch and, ultimately, all the remaining roots were removed, the operation in each case being attended with similar results, only that the subsequent hæmorrhage was modified by antiphlogistic treatment meanwhile.

The solution used was in the proportion of a good teaspoonful of powdered alum to about a tumbler of water. Its action appears tardy, in comparison of the more powerful caustic remedies, but in twenty operations, there was no recurrence after the bleeding had been once checked. A remedy so simple, and so entirely unobjectionable, is certainly worth an experiment, and it possesses this advantage, that the patient may be trusted to use it without any evil results.

COMPLETE NECROSIS OF EIGHT TEETH FROM A BLOW.

BY W. GEO. BEERS, L.D.S., MONTREAL.

A little over two years ago, a vigorous young friend of mine, aged twenty, received a severe blow directly under the nose, while in the act of shouting to a fellow player during a game of Lacrosse. The upper lip was considerably cut, and the crown of the left superior central incisor was broken transversely with the pulp chamber, leaving the pulp hanging partly out of the cavity. As he insisted upon continuing the game, I improvised a barbed brooch by jagging the sides of a common pin with a penknife, and then crooking its point, and succeeded in extirpating the pulp entire, with little or no pain. I observed, as something unusual, that the projecting portion was not at all sensitive to the prick of the pin, while that situated higher up in the cavity was extremely so, and actually reflected a shooting pain along the branch of the nerve. The adjoining teeth did not present any appreciable indications of serious results from the blow, and only the remaining portion of the broken tooth and the adjacent lateral incisor were at all tender to the tap of an excavator,

while there was no inflammation of the gums, and the cut lip occasioned more pain than the broken tooth.

The second evening after the accident there was a slight tumefaction over the fractured tooth, and both it and the lateral were more tender at the root than the previous day. I applied two leeches to the gums, and the third day all pain had completely subsided, and at the expiration of three weeks, I ventured to insert a pivot tooth to replace the one broken; taking the precaution,—which I considered to be necessary—to prepare the root one day and pivot a few days afterwards. Up to the last day I saw him, he had never had a moment's pain or soreness in this root, but had intermittent pains of a few days duration in the adjoining lateral for over two months, feeling, as he described it, like the knitting of a fractured bone.

About a year ago he came to have his teeth examined before going to Chicago, where he had decided to settle with a newly married wife. I found the pivoted root sound; the troublesome lateral perfectly comfortable. I filled two large cavities with gold in the first inferior molars—the only fillings he had ever had—and after carefully examining the front teeth, I felt justified in prophecying for them a long lease of life. Last January he returned to Montreal, and judge of my surprise to see him come into my office nearly edentulous. The pivot tooth and root, and the adjoining lateral, perfectly free from caries, were easily moved about with his tongue and lip; the cuspids were both loose; the right lateral and the two right bicuspids had actually dropped out of the alveoli. The superior molars and all the teeth of the inferior maxillary were perfectly firm and sound, otherwise I might have suspected mercury, though there were none of the special indications of mercuralization then present; and my patient assured me on his word of honor—which was perfectly reliable—that he had never to his knowledge taken a grain of medicine in any shape or form for the last twelve years, and that he had never had any venereal disease. His parents were both hale and hearty Highlanders, and I would not consider his constitution to be one as easily irritated as some systems are.

The gums and alveolar processes had receded from the necks of the teeth, but it was very clear that the cause did not lie there. There was no perceptible discharge of pus, no pain, no tenderness. The pulps were dead, but the teeth had not assumed the dark hue noticeable in many cases of necrosis.

The alveoli had exfoliated where the lateral and bicuspids had dropped out.

I extracted the lateral and two centrals, and found, as I had antici-

pated, complete necrosis; the fangs denuded of living periosteum, and covered with little grey and green nodules, similar under the microscope, to salivary calculus. The change in the appearance of the cementum from its normal condition was very striking. A section of dentine of the lateral incisor, under the microscope, revealed the calcification of the dentinal fibres.

I must confess to have been sorely puzzled about this case, presenting, as it does, peculiarities seldom observed in the one mouth, and, what seems to me to be, contradictory characteristics in the course of the disease, and being marked by a complete absence of pain, and no perceptible effusion of pus. I would not have been greatly surprised to have found periodontitis and suppuration from the pivoted root, or even the wounded lateral; but I was shocked to witness the complete destruction, without the barest possibility of cure, of eight teeth, seven of which a year ago were free from decay, and presented fair appearance of a long life. Had inflammation of the periosteum supervened from the blow, the usual indications would be expected, but there were comparatively none of the simplest, and absolutely none of the most marked. The very idea I had in extracting the pulp at the time of the accident was to prevent an extension of the inflammation through its reflecting media to the surrounding membrane, and I think the rather remarkably favorable condition of the parts afterwards, may be attributed to this reason, though it is a question with me now if it might not, perhaps, have been better to have extracted the fractured tooth.

FRACTURE OF THE LOWER JAW RESTORED.

BY J. NEELANDS, L.D.S., LINDSAY, ONT.

A young man, an English emigrant, by the name of Samuel Jones, while working on the extension of the Midland Railroad, in the month of January, 1870, met with a serious accident, which nearly proved fatal. He was engaged with some other laboring men in cutting down trees, when one, in falling, struck him. He was, at first, supposed to have been killed, as he was insensible for some time. One of his legs was badly broken, several of his ribs were fractured and his lower jaw, and four of his inferior incisor teeth detached. The accident occurred late in the afternoon, and I was requested by Dr. Benson, who attended the case, to go and see him after he was brought home, and to take some fine wire for ligatures, in order to retain the teeth and jaw in proper position.

When I arrived it was almost dark. We first arranged his leg, which had been broken, into proper position. It had been set near where the accident occurred, and he was brought home in a sleigh. We next proceeded to bandage the ribs; and lastly, to set the teeth and jaw into position. On examining the jaw we found that the four lower incisors with a portion of the inferior maxillary bone, were completely detached with the exception of a slight fleshy attachment on the lingual surface. The four teeth and the portion of jaw adhering were thrown back against the tongue. We had very little hopes of it ever being restored to its original condition. We thought of cutting away the portion of flesh retaining the teeth and putting in artificial teeth to replace the natural ones. We attempted to replace the teeth in their natural position and set them firmly with ligatures of wire, but did not succeed. By this time it had become quite dark, and with lamplight it was difficult to adjust the ligatures, besides the patient was bleeding profusely. I concluded to take an impression and construct a splint of hard rubber, as it was the only feasible way that I could devise of retaining the teeth and jaw in position. The following day we inserted the vulcanite rubber splint, which answered the purpose splendidly. It continued gradually to improve, and in about two months the teeth had become reunited to the jaw again. The treatment was similar to most other fractures. I have had several opportunities of seeing him, and, on examining his mouth, found the teeth were as firm as ever they had been, and the gums looked healthy and natural. The only possible defect observable, is that there is a slight space of about one-sixteenth of an inch between the left lateral incisor and the cuspid.

No person would suspect, for a moment, that any injury to any serious extent had ever occurred, as far as the appearance of the teeth and mouth are concerned.

FIVE TEMPORARY TEETH AT FORTY.

BY H. G. KENNETH, L.D.S.

About a month ago a lady called upon me, aged about forty, to consult me with reference to the looseness of three upper and two lower teeth. They had been perfectly firm all her lifetime until within the last month.

Upon examining I found the loose teeth, the two laterals and the left cuspid in the upper, the two centrals in the lower jaw, to be temporary teeth. There had never been any teeth extracted since she was a mere child. There was no presence of the permanent substitutes. I extracted the teeth, and found the usual indications of fang absorption, though the fangs had an older, yellower appearance than when thrown out in childhood.

IMPRESSION CUPS.

BY X. Y. Z.

Without a good impression of the mouth, frequent misfits and occasional failures must ensue in making artificial teeth. Those who depend altogether upon wax, and even those who principally use plaster, will find frequent advantage from splitting the sides of the ordinary cups, in several parts of the sides, so as to allow of their being bent in to suit a depression, or out to suit a prominence. Before using, solder another thickness of tin plate to the bottom of the cup, to prevent it bending, as the cutting of the sides weakens that part. One other advantage with the cut cup in using wax, is, that the wax catches in the cuts, and does not "draw" as easily as in using the ordinary cup.

In very difficult cases, I take an impression as well as I can with wax or plaster, and then vulcanize a cup of black rubber to suit it. Some of the leading mechanical dentists of the neighboring country do this in every case.

In high arches I invariably use a lump of hard wax in the centre of the cup, placing the soft wax over it. Sometimes I put the wax into the mouth with my fingers, adapt it around the parts, and then put in the cup and complete the process.

I also cut niches at the posterior part of all my cups, to prevent the *drawing away from that part;* which it frequently will do.

THIN AND THICK VULCANITE.

BY J. LAUDER.

There is one point in vulcanizing rubber which I have observed, which, I think, has a good deal to do with the strength of the set; viz., that a comparatively thin plate is proportionately stronger than one four times its thickness, and that a thick plate reduced thin is never as strong as one that is vulcanized thin. The thicker the rubber in vulcanizing the less dense and hard the centre of the body.

The moral, then, is, to make your pattern plates the exact thickness required, and to take every precaution possible to have your rubber plate come out of the flasks thin.

A NEW WAY OF MAKING GOLD PLATES.

BY W. G. B.

It is well known that the process of hammering a gold plate on the male die, defaces the die to a considerable extent.

I had a plate to strike up the other day, and it occurred to me that I might, perhaps, get as good a fit by screwing it up between the dies in a press; and having that used for the Pyroxyline base in the office, I tried the experiment and found it to work admirably, without defacing the rugæ of the mouth, which were very prominently defined on the die.

In difficult cases, the plate might be struck up as usual, annealed again, and then screwed up in the press between new dies.

APRON FOR USE WHEN EXTRACTING TEETH.

BY W. G. B.

When extracting a number of teeth, especially for ladies, every precaution should be used to avoide soiling the patient's dress. When under the influence of an anæsthetic, the blood flows without control on the part of the patient, and expectoration is frequently so indiscriminately wide of the spitoon that the dress is soiled. At all times this is exceedingly annoying to a lady, and ought to be equally so to the dentist. I find nothing better for an apron than a piece of rubber-cotton cloth, cut out to fit the neck, fold down the shoulders and fasten behind. It should be long enough to go down to the patient's feet, and wide enough to cover the dress. It can be washed in an instant with a sponge. A nice clean soft sponge, to wipe the face of the patient, ought to be indispensable in every dental office.

PROCEEDINGS OF DENTAL SOCIETIES.

ONTARIO DENTAL SOCIETY.

We call attention to the notice on page 23 of our advertising sheets, of the Annual meeting of the above Society, to be held in the City Hall, Toronto, on the 20th of next month.

We are not exactly informed of the programme, but we have assurance that very particular business will be brought forward, in the consideration of which every Ontario dentist should share. It is expected that this meeting will be the most important and useful one yet held. With so long a notice, no one can have reasonable excuse for absence.

MONTREAL DENTAL SOCIETY.

BY L. J. B. LEBLANC L.D.S. SEC'Y.

The regular monthly meeting was held at the office of Dr. Alloway on the 5th of June, when Dr. Alloway, in lieu of a paper, which he had

not quite completed, gave a very interesting verbal report on the uses of "Aluminum in mechanical dentistry," showing its advantages and its faults. A discussion ensued on the subject.

It was decided, that in order to check the prevalent habit of a class of dead-head patients who prey upon the profession, a "Black Book" be opened with the Secretary, in which each dentist may record the name address, business, &c., of his "Bad pay patients," from which book every member would be permitted to copy. A class of persons make a business of swindling professional men, and in the course of time go the rounds of the profession. This record will be of use in guiding members from their imposition.

The question of show-cases has at last been finally settled, by a mutual agreement to abolish them forever. The society has contributed largely to effect this result.

The next meeting will be held (July 3rd) at the office of Dr. Trestler & Bro., when voluntary Essays, Readings and Discussions will occupy the evening.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

Maine Dental Society, Feb. 21.—"Rubber Plate Poisoning," a subject which has excited the public mind by articles condemning rubber, published in the various journals in the State, was taken up. Each gentleman rendered his experience and observation. The summary conclusions were—that the percentage of inflamed mouths is not so great as when silver was used, and a little larger than gold produces; that most of the cases are *local*, and due to lack of thermal change in rubber and to ill adaptation; that strong atmospheric pressure, gained by flexible edges, ridges, and deep chambers, is a productive cause and an injurious fit; that an idiosyncratic patient very susceptible to the influence of mercury, which is generally the result of a mercurial treatment, may be constitutionally affected by wearing the red rubber, and it may be corrected by the use of black rubber, which is superior in strength, and does not possess the objectionable properties of the red; and the choice of color of the plate in any case is but very little advantage, excepting when exposed to view.

The propriety of capping the pulps of teeth with oxychloride of zinc was discussed, and the general opinion was that, on account of its antiseptic properties and its non-conductibility, it may be successfully used in teeth with slightly exposed pulps which have not ached, if carefully manipulated, and the teeth have received proper treatment; also when

the pulp has only a thin lamina of dentine over it, to cover as a protection, with oxychloride of zinc previous to filling; further than that, like all remedies heretofore used, it failed to save the pulp; that it frequently causes much pain, sometimes of several hours' or days' duration; that although there may be no after-trouble, and the teeth usually retained a lifelike appearance, upon examination the teeth will be found dead, the pulp being generally atrophied and the canals dry. On acount of these conditions, it was suggested that the use of oxychloride of zinc might be the best practice to try and save the pulp, and if it failed as a preservative, that, perhaps, it might be the best devitalizer.—*Cosmos.*

SELECTED ARTICLES.

NEW THEORY IN DENTAL HISTOLOGY.

The possibility of the offspring of those who have lost their teeth early being born without teeth or endentulous.

BY S. P. CUTLER, M.D.,D.D.S.

Read before the New Orleans Dental Society.

Two theories have been advanced as to the determining cause of inherited forms, the older writers, such as Wolfe, in his "Theoria Generationis," laying the foundation of the latter hypotheses of Lamark and Michel, of laws of descent and adaptation, through modifying influences. Similar views have been advocated by Geoffrey St. Hilaire, Bonnet, Robinet, Milne Edwards in his "Recent Progress of Zoological Sciences," and by the still more recent developments of Darwin, in his "Origin of Species by Natural selection;" by Claude Bernard in his "Recent Progress of General Physiology," and Herbert Spencer's developmental or evolution hypothesis. To these may be added the researches of Lereboullet and M. Dareste, on "Embryology and "Teratology," and also those of Prof. Huxley.

Now, should the theories adopted and advanced by the above-named authors prove to be true, my hypothesis, presented in this communication, will have a valid foundation.

On the contrary, should the doctrines advanced by equally distinguished names, such as Cuvier, Owen, Agassiz, and many others, adopting the idea of the fixedness and unchangeableness of types depending on predetermined plans of archetypal primordial cell germs, then my hypothesis has no good foundation.

As extremes must compromise on middle grounds, there will, at least, be some foundation left for me.

As instances of illustration, I will mention the fact that on the Isle of Man there are species of cats without tails more than an inch in length. It is believed that the ancestors of these cats, from generation to generation, had their tails cut off by their owners, from a whim or custom, until ultimately the protoparous or offspring came without tails. I have seen many of these cats. There is a species of small French dogs without tails. I have seen these dogs. I am not familiar with their tradition. Their ancestry, no doubt, once had tails.

Now, suppose we were to cut off all the tails of all the dogs and cats in the country for generations, the result would be, beyond a doubt, caudatulous, or tailless dogs and cats; at least many of the offspring would have no tails, from a law of necessity based on habit.

Here is the point I wish to argue. When an animal is maimed in any not over-vital part while quite young, there is, from necessity, a weakening of nerves and vessels running to such part, or as an atrophied condition; as the animal grows, the development in that direction is defective, in consequence of less vitality.

Now, if there is any truth in the modifying influence of habit, which has been sufficiently and repeatedly demonstrated within the last fifty years, may not the same rule hold good in that of the wholesale extraction of teeth, more especially those of the female when quite young, and repeated from generation to generation? The influence on the female might be supposed to be greater than on the male.

In the removal of all the teeth, let it be remembered that there has been removed from the maxillary organs several hundred millions of nerve fibrils or filaments, more or less, together with their blood-vessels.

From a law of necessity, the nerve trunks and vessels running into the maxillary bones to the teeth must become more or less atrophied, and a less amount of vital force is even demanded by the organism, at least minus the amount previously needed to sustain those organs.

As the cosmical universe is made up of cycles and epicycles, or greater and lesser cycles, the organism forming a part of the cosmos, these same cycles equally exist in the organism, and, by dismembering any part, there is a change or disturbance in the cycles of such region. May not the cycles so modified, in the course of generations, impart their impress on the fœtus? Is it not more reasonable to suppose the above condition than that a monkey, by curtailing his tail, becomes ape, then

man, from the fact that when he became man he had no longer any use for a tail? Hence the offspring were minus their tails.

Let us again look at mother-marks, or nævus maternus, and see what influence the mind has on certain regions of the body of the fœtus in utero, in some cases changing the entire being into a monstrosity. (See "Treatise on Teratology.")

Longing on the part of the *enceinte* female for certain articles of food leaves or imparts the mental influence on some portion of the child's body, showing the influence of mind over germinal matter at certain stages of development.

Frights, and other sudden and powerful emotions, impart certains changes in fœtal development.

All the above named influences are reflex action through the neural forces of the mother, which are continued through the fœtal organization. Sometimes such influences cause complete arrestation of fœtal development; in other instances, deficiencies in one region and protrusions beyond the normal boundaries in other regions—in other words, changing the normal type.

What do such facts prove, or how do they apply to the subject?

In the first place, we will suppose that the rubber dentist, who is wholly incompetent to save teeth, constantly advises his victimized patient to have all her teeth removed, as they cannot be saved, or are not worth the trial; and her constant declaration that she wished she never had had any teeth at all, as they had always been troubling her.

These very assertions and influences of the mind over the nutrition of these organs may ultimately so arrest normal nutrition as to render the teeth less resistant to outside influences. Supposing these influences are uppermost in the mind during gestation—what effect might not be produced?

There are well authenticated cases where domestic animals, having had limbs removed by accident, have brought forth offspring similarly maimed, and those offspring have done so in turn for a number of generations.

These are all striking proofs of my position.

We find bad teeth and certain peculiarities connected with the forms of jaws hereditary in certain families; so much so that, unless prevented by favorable crossing, they expect their children to have equally as bad teeth as themselves; and they are not generally disappointed.

Hereditary peculiarities in dental conformations are constantly presented to the dental practitioner. Peculiar features of certain teeth in

the mouths of parents are often recognized in the third generation, and we do not know how much farther off.

Harelips and badly fissured palates are frequently handed down in uninterrupted succession in some of the offspring, while others of the offspring are exempt—though in these cases of exemption outcroppings are frequently noticed in their children.

Kyllosis, or club-foot we see hereditary from the female side only, owing or depending on position of fœtus in utero, never being transmissible from the male side unless through his daughter, in case his mother was of that class, the cause being dependent on peculiarity of pelvic form of the female.

Many other cases in confirmation of my position in relation to teeth might be given, if necessary.

Again: supposing all the teeth of the grandmother, mother, daughter, granddaughter, great-granddaughter, and so on for many generations in succession, were extracted while quite young from defective development, what would be the probable ultimate consequences? In all probability the offspring would be born endentulous or toothless.

The same rule will also apply to the male parentage to a great, but not likely to the same, extent as to the female.

We sometimes meet with persons that never had any teeth at all, or even rudiments. On the other hand, we meet with persons having supernumerary teeth, though they are generally small or otherwise imperfect. We sometimes meet with persons having cut their third set more or less complete.

In the latter cases there is an excess of vital formative force repeated late in life. Whether these teeth had their germs developed in fœtal life or not, is an unsettled question, as we have not sufficient data on this subject. I have seen a number of cases where several teeth had made their appearance after all the others were either out or decayed off. I saw an old lady who had cut a tooth in the anterior portion of the upper maxilla, near the mesial line, resembling a canine, lying nearly horizontal with the ridge. She has one upper molar only, and about half of the under set, quite sound. She had worn a gold plate many years.

There is no doubt in my mind but that organic structures are susceptible of important modifications from force of habit alone, by artificial means continued in one direction for a considerable length of time.

I have seen one edentulous case, a judge, who never had any teeth in his mouth. The well-known Keith family, of South Carolina, from generation to generation back, have been born without any teeth at all,

even when marrying out of their own immediate family. The peculiarity in this family is very noted and persistent. Atavism we often notice where a saltus has been made past one or more generations, then cropping out again, as in many of the above-cited cases.

Now, the point I wish to argue is this: that if this theory should prove correct, we may reasonably calculate on the dentist's occupation being gone for lack of material to operate on. I do not pretend that children will be born with rubber or any other kind of plates in their mouths, but that they may be born without any tooth germs.

In furtherance of the above hypothesis, I will copy an article published in the *New Orleans Times*, Nov. 13, 1870, which goes far to confirm my views:

"*More about Hereditary Deformities:*—An intelligent observer, in a pleasing note to the editor of the *Times*, gives a very interesting case of accidental and hereditary distortion; some persons think so very singular as to doubt its truthfulness. In a scientific point of view this case is a most interesting instance of the doctrine of natural selection in the modification of species, but not as Dr. Darwin and the ingenious Mr. Wallace discuss the alluring hypothesis. These gentlemen urge that such variations of species is a natural law. So uniform is this law from their standpoint, that they dignify it with the imposing name of natural selection.—*Cosmos*.

THE PERKINS HYATT BASE.

Several inquiries have come to us relative to the above new introduction, and we cannot answer them better than by giving a few extracts from the pen of Dr. W. H. Eames, the editor of the mechanical department of the *Missouri Dental Journal*. Dr. Eames does not hesitate to announce his disappointment and want of confidence in the new base.

"We find the new base to be a compound of collodion (made by dissolving gun cotton in camphor), with gum copal, or some other vegetable substance, to prevent the shrinkage.

In comparing the material we received with the statements made in the circular respecting it, we find first, that while it is a little lighter than rubber it is *not* as strong, being unfit on this account for partial cases, of one or two teeth. Secondly, its color, reddish pink, is very little better than that of rubber. It may not change color on being worn. Thirdly, it is not entirely free from all unpleasant taste to those who dislike the taste of camphor; some patients undoubtedly will not object to its use on this account. Fourthly, it may not be injurious to any mouth not sen

sitive to the effect of camphor; in our own case the effect is decidedly unpleasant. Fifthly, it *can* be manipulated as easily as rubber. Sixthly, we question the assertion that it is more pleasant to the wearer than plates made of *any* other material. We do not find it as pleasant or comfortable to wear, as either gold or rubber. Seventhly, the assertion that a set of teeth can be made with this base, in from one-third to one-fourth of the time required for working rubber, is simply not true. The manipulation of this base being precisely that of rubber, except the packing and vulcanizing, will of course require the same time. To pack and vulcanize a rubber case will require from fifty minutes to an hour. To thoroughly dry the moulds preparatory to packing the Perkin's base, especially in the solid flask sent us, will require at least thirty minutes; to heat up the oil and pack the case, twenty minutes, making fifty minutes, the time it takes to pack and vulcanize a rubber case, or nearly.

The odor of boiling sweet oil, combined with that of camphor, is quite as unpleasant as that of sulphur from the vulcanizing of rubber. It may be considered neat, clean and a perfect luxury to some persons to work this base, but we have no desire for such luxuries. It may prove superior to any known artificial teeth, but we are not prepared, from what we have seen of it, to admit it.

It will undoubtedly do very well for temporary work, for full sets, or of eight or ten teeth, but for partial sets of scattering teeth it does not possess the requisite strength to make it of any value.

An important item seems to have been overlooked in the circular. No mention is made of the mode of repairing this work. Any base to compete with rubber must be as easily and readily repaired. We doubt if the Perkins base possesses this quality.

We think that a base will yet be produced from collodion superior to rubber but do not think it has yet been reached. This base may be a step in advance—we hope it is.

We have seen one case, a full upper set, which has now been worn two weeks with perfect satisfaction. The patient was an old lady, who had been wearing a badly fitting rubber plate, and who had been in the habit of making great use of the spirits of camphor. As this plate fits nicely it is certainly an improvement on the old rubber one, and the taste or smell of camphor is no objection in her case."—*Missouri Dental Journal.*

DENTAL EDUCATION.

BY H. SCOTT.

It is a matter of pride to every dentist who loves his profession, to know that so much is being done to enlarge and popularize dental science.

The efforts to this end are seen in colleges for the special preparation of the mind and hand for professional duty; in the extent and ability of dental literature; and in the formation of national, state, and district co-operative and mutual aid societies. In the van of all these movements are men of high mental and educational ability. We have also with us a large amount of inventive genius. The plan of education for dental colleges is broad. A man can not graduate in any of our institutions of learning, with less than a respectable acquaintance with anatomy, physiology, chemistry, pharmacy and therapeutics, in addition to a thorough knowledge of all the specialties of dental theory and practice, besides being a respectable English scholar. He must also show in the laboratory a respectably constructive and manipulative ability, and withal fill the measure, pretty nearly, of a gentleman in his sphere of life. This is the high stand our colleges have taken, and is all well and right. With every meeting of societies, as also with the monthly and quarterly appearance of our periodicals, new lights are emitted. Some new and better methods of doing things have been found by the pioneers of the profession, and with few exceptions, are contributed to the common stock. And thus, within a little more than a quarter of a century, has the profession of dentistry come up from obscurity and almost contempt, to rank with the learned and popular institutions of the age. There is no movement of the nineteenth century that has equalled ours in the rapidity and value of discovery, and successful practical application to the comforts and requirements of man. These are the facts that stimulated and encouraged us all to still greater and more useful achievements. This is all well; but are we not delinquent in plans for the required

EDUCATION OF THE MASSES?

How this is to be done, is the question to be talked over. We might prepare and publish for the people such facts as they are most interested in understanding, and the knowing of which would render the dentist's professional intercourse, intellectually and mutually agreeable, besides lightening his labors, and at the same time, increasing the pecuniary interests. The truth is, that with the exception of one or two in one or two thousand, the people know less of their teeth, physiologically, pathologically or remedially, than of any subject that concerns their welfare; and this is true of large numbers of both sexes who, upon almost every other question are well informed. How many can any operator find among his patrons, even the best educated and most intelligent of them, who can tell for their lives what the teeth are made of? Where will you find one who knows that every tooth has a nerve, and an artery, and a vein entering at

the point of every root, through an opening sometimes too small to be seen with the natural eye, and all sheathed with an exceedingly delicate and sensitive membrane, and that these widening out in the crown, form the pulp or nerve of the tooth, as it is common to say. A very great many people, otherwise intelligent, believe to-day that every tooth has a worm in it, which causes toothache by biting, or perhaps, by wiggling its tail. We often hear people speak of the worm in their tooth. It is due to every body that has teeth, that they should be instructed in the anatomy, physiology and pathology, as well as cures of the teeth; and also, that being connected with the general system by deriving their nerves from the same trunks that send branches to the ear, face, scalp and other parts, morbid conditions of them often induce severe pain in remote parts, by nervous sympathy. They should also know that inflammation of the investing membranes is sometimes the cause of the most intense pain. Who that has been a dentist a few years has not been almost daily enlivened with the following and similar questions: "*Doctor, do you know anything that is good for aralgy?*" You examine the mouth and find the source of the "*aralgy.*" But that can't be possible, "*the tooth has never ached,*" and before you can arrive at an understanding, and do what the case requires, you will have consumed as much time as you should consume in relieving two, or half a dozen cases. And then "*I don't think its toothache; I think I have taken cold.*" *And,* "*why doctor, how can a tooth ache when it has no nerve in it?*" One will insist that he never shed his first teeth, another that he has double teeth all round, and occasionally you find one that *has his third set.*" Well, this is all excusable, for none of us know anything till we have learned it.

A liberal and general special education of the whole people, on all matters concerning the teeth and their cures, would also sooner and much more effectually rid society of incompetent and mere mercenary operators, than any laws can do. I rather doubt the ultimate success of laws regulating medical or dental practice. We shall see in time, but my observation has been, that a majority of the common or non-professional people have been inclined to regard all such legislation as partial and intended to favor the few. I take it for granted that every body is aware that the people, as a rule, are impatient of legislation conferring special privileges on societies or parties. Of one thing I think I am sure, that there are as many quack dentists to-day as there were before the existing dental law was passed, and I know of no way on earth to make them less, other than starving them out. Dentists can not become informers, for that would be jealous persecution. The people will not present them, but they would let them alone if they could duly and intelligently understand that their personal interest would be served in doing so.

I have sometimes thought that a dentist who would keep in the straight and narrow way, should attend not less than two methodist camp meetings each year, if he would not fall from grace, or, on the other hand, that he might be converted over again as often as he lost his religion. It is less than a week since that a lady called at my office with her two daughters, of 15 and 13 years respectively. I have had charge of this lady's teeth, as well as those of her husband, for more than twenty years, and could as easily have conceived of any event in the world transpiring, as that they would have taken their daughters to any office other than mine to have their teeth filled, or for any advice concerning them. I had a right to feel and believe so, for they have always spoken of me as a friend, and have counciled their friends to come to me for professional services. What was my surprise and mortification, as well, on finding that the girls had been thirty miles from home attending school, and had found a dentist who assured them that amalgam was far better every way to fill teeth with than gold, and actually, with the approval of their father, had some incisors with small cavities filled with an imperfectly prepared amalgam, which was already of an inky color. I felt then, and so expressed myself to the mother, that self-respect would require me to withdraw from my profession in very shame, and never touch another tooth while I lived, but better thoughts have since prevailed. And there are many such trials of patience. I could write a volume about them. A lady, whose teeth I filled thirty years ago, sent her daughter recently to have two incisors filled. She would not allow the file used. Somebody had told her that the file would break the enamel.

I spent a reasonable length of time in trying to satisfy her that the ragged and crumbling borders must be trimmed back to ensure successful filling, but I could not overcome her prejudices, and was obliged to dismiss her, though she was above twenty years of age. I suppose every dentist has his share of such experience. It must be to an educated people, at last, that we are to look for the final success of our profession; and let us see finally how such education can most effectually be secured.

Every educated dentist could write out the very lessons important to be learned, but how could they be printed and placed in the hands of every family? Newspapers will not, and should not publish such matter without pay, and who can afford to pay for so much printing out of his own pocket. But suppose such literature were distributed gratuitously, how is its study to be insured while Bonner's *Ledger*, the *New York Weekly*, and hundreds of such sheets, are sent off by the car load to fill every house in christendom with cheap reading. It would be almost a marvel to-day, if a single house could be discovered, where these frivolous, if not

directly demoralizing sheets do not constitute the greater part, if not the entire family reading, while sensible books, including the sacred volume, are peacefully corroding away on the shelf. The infatuation for this fictitious and low literature is appalling, and disreputable to an enlightened people. Think of our women chiding their husbands and sons on account of their tobacco and lager, and then think of their minds being chained down to the low thoughts and carricatures of human nature, that make up about the sum total of the cheap literature of the day.

If any good is to be done in the way of elevating the public mind up to an intelligent understanding of the advantages of dental science, and its practical utility and application to the requirements of the mouth I apprehend that it must be accomplished through the instrumentality of our common school system. As the world is now, men and women have no time to devote to useful study. The acquisition of money requires all the time of nearly every person, leaving just interval sufficient for sleep and the reading of the *Ledger*, *Weekly*, etc. Men and women ought to be educated in the art of taking care of their bodies, and of preserving the best physical health; for without sound organisms, there can scarcely be sound and vigorous minds. The public funds should pay for the public education, and this should include the study of the teeth and their diseases and remedies. In no other way does it seem possible that this end can be accomplished, and the study may become a part of common shool education. Dental associations should work to awaken the attention of legislatures.—*Dental Register.*

METHODS OF CONSOLIDATING GOLD FILLINGS.

BY S. G. PERRY, D.D.S., NEW YORK.

Read before the New York Odontological Society, April 18, 1871.

In considering the consolidation of gold, I shall be obliged to give some attention to the preparation of cavities, and to the kind of gold used. Without discussing the principles involved, or considering the methods adopted by others, I can only give the conclusions at which I have arrived through my own experience. Perhaps this can be done in fewest words by a simple description of my own method.

The *best* operations I ever performed were made with adhesive gold, packed with small-pointed, finely-serrated, nearly straight instruments, in cavities easy of access, free from under-cuts, and in teeth around which the rubber dam could be used. Here, then, I have a criterion. If their perfection was due to nearly parallel walls, straight instruments, adhesive gold, and the rubber dam, then all other operations, when possible, must be performed in the same manner. This I accept as a general rule,

though such a great variety of cavities occur that it will not do to generalize too freely.

What I most desire from gold is *strength* and *adaptability*. Strength I get from adhesive gold, and adaptability by cavities prepared to admit the use of nearly straight pluggers, and—backache! The strain upon the nervous system in packing adhesive gold is enormous, but I know of no "royal road" to permanent success of any kind. The gist of what I can say, then, on this subject of the consolidation of gold is, *small-pointed, nearly straight instruments, and the lead mallet in my own hands.* This for all cavities, large or small, when the rubber dam can be used; and it can nearly always be applied to all except the wisdom teeth,—and sometimes the second molars before the wisdom teeth are erupted,—and in most cavities anterior to the second molars straight instruments can be used. I use the mallet myself that I may better control the force of the blow and better conduct the operation generally. Particularly do I find this true in contour fillings.

In packing gold by this method, of course I prepare my cavity with it in view.

I first decide from which side, or from what direction, I will fill, and then cut from that direction, as much as possible, with nearly straight chisels, so that when ready for filling, a straight plugger will reach every part of the cavity.

In approximal cavities of the incisors, for instance, I was taught, when a student, to pay little attention to the shape of the cervical wall, but to depend on the lateral walls and distal extremity for support. I reverse this now entirely. I leave no retaining point at the distal extremity of the cavity, unless it is unavoidably so shaped by decay, and I can fill it with a straight instrument and mallet. I want the support for my filling in the base of the cavity, and along the lateral walls for a little distance from the base. With this in view, I excavate at the cervical wall until I get a firm foundation, leaving, if possible, no undercut at the distal extremity, nor under the lateral walls for some distance from the distal extremity. At the base I excavate in conformity with the naturally oval outline of the cavity, or I cut the base at right angles with the lateral walls, as may seem best. In either case I drill a small retaining-point in the most acute angle of the base. This I do that I may mallet the first piece of gold firmly in the place where it belongs. Then, having both hands at liberty, I can carefully mallet every mat of gold that goes into the cavity. Proceeding in this way I feel more sure of the foundation than by holding the first few mats in place and using only hand-pressure. These retaining-points are small, and are intended

to give support to the gold only during the process of filling, and not to the plug at large after the operation is completed.

A cavity prepared in this manner can, of course, be filled with a single straight instrument, and the gold be consolidated entirely from one direction.

In packing the gold I hold the plugger in the left hand (which I seldom move from its support on the patient's face or chin), and alternately introduce the gold, and use the mallet with the right. The gold I anneal, if necessary, and convey to its place in the cavity on the point of a small instrument used as a spear, or by delicately-pointed pliers. The points of our ordinary pliers are too large, they rapidly absorb the heat from the flame and cause the gold to be unevenly annealed. Retaining this heat, they cause pain in applying the gold.

I pack the gold as full as I desire it to be, while going on with the operation, so that the last mat is put on at the distal extremity of the cavity. The foot-shaped instruments I use only for condensing the surface and margins, either during the process of filling or after the gold is all introduced. The burnisher I seldom use except at the margins—never after the file and stone. If the gold is not condensed by the plugger so as to file or stone down perfectly smooth and free from pits or flaws, the burnisher cannot remedy its defects.

In approximal cavities in the incisors, when strength is not desired, I use gold No. 5, soft—it is called soft, and yet is sufficiently adhesive to pack well—No. 4, adhesive, and Nos. 20 to 60, rolled. This latter I use a great deal, though not so much as formerly, having learned from a pretty thorough trial where I can and where I cannot use it to advantage. The low numbers I fold in ribbons, and cut to suit the case.

I fill in this manner all cavities that can be protected by the rubber dam, and that are sufficiently in the anterior part of the mouth to allow the use of straight instruments. Such parts of approximal cavities in the bicuspids and molars as cannot be easily reached by such instruments, I fill with pluggers bent at nearly a right angle, using the mouth-glass and hand-pressure.

The *exceptions* to this method are approximal cavities in the incisors, already so badly decayed as to render it impossible to prepare them without under-cuts that extend under thin walls; approximal cavities of the same kind in the bicuspids, and very often cavities in the grinding surfaces of molars and bicuspids, having small openings, and yet showing considerable decay interiorly. Such cavities I excavate thoroughly, and fill with oxychloride—more recently with Guillois' cement. After it has set, I cut portions of it away, shaping the cavity as if decay had

never gone beyond its margins, and fill with adhesive gold, packed, as before described, with straight instruments and the mallet.

This, I suppose, will not be considered quite "orthodox" by some members of the profession, especially those who are in the habit of using non-adhesive gold in cavities in the grinding surface. But, if oxychloride can be left in a cavity where it has been put as a capping for an exposed pulp, why may it not be left in any part of any cavity where a straight plugger will not reach? That it will prevent decay we all very well know, and when protected from the action of the fluids of the mouth it seems to me to be the best material with which such cavities may be filled. It has also the advantage of being a non-conductor, so that nearly exposed pulps must be less endangered.

If oxychloride is too white to put under the enamel of incisors, Guillois' cement is darker and less objectionable than the yellow color of gold, and not so liable to discolor.

When the rubber dam cannot be used, and the operation must be performed quickly to avoid the fluids of the mouth, I know of nothing better than sponge in approximal, and soft gold in grinding surface cavities, introduced and condensed by hand-pressure, aided, if possible, by the mallet. Operating as I do without an assistant, in such cases I use Salmon's automatic, the points being finely serrated, and patterned after those I use with the lead-mallet, though somewhat larger. Such fillings are generally unsatisfactory, though of course better than none at all. I formerly operated almost entirely with the automatic, but found it having too much lateral motion, too liable to check the teeth from the sharpness of its blow, and not so obedient to the brain as one's own hand. In fact, it is *too* automatic.

Using oxychloride in badly-shaped, inaccessible cavities, it is unnecessary for me to say that I very seldom use cylinders.—*Dental Cosmos*.

BIBLIOGRAPHICAL NOTICE.

THE MEDICAL COSMOS. Vol. I. No. 1. A monthly abstract of Medical Science and Art, Editor and Proprietor Geo. J. ZIEGLER, M.D. Philadelphia. $1 a year.

This addition to medical journalism is designed to afford a résumé of the latest developments in *practical medicine* representing the advanced ideas of the age from all parts of the world. It has the character of Braithwaite's Retrospect, only on a smaller and more compendious scale.

Dr. Ziegler has for some years had charge of the periscopic department of medicine and general surgery in their relation to dentistry, of the *Dental Cosmos* and has shown great aptitude for the specialty of selection, which he intends to assume more independently in the Medical Cosmos.

CATALOGUE OF ARTIFICIAL TEETH, DENTAL MATERIALS, INSTRUMENTS, TOOLS, FURNITURE, MANUFACTURED, IMPORTED AND SOLD BY CLAUDIUS ASH & SONS, 7, 8 AND 9, BROAD STREET, GOLDEN SQUARE, LONDON, ENGLAND, 1871.

We have received a copy of this very handsome Catalogue of 201 pages, containing a very fine list of the Dental necessaries and luxuries, sold by the Messrs. Ash, and which is embellished with a large number of wood-cuts, as well as a frontispiece showing the manufactory in Kentish Town.

The first thing that must strike dentists on this continent in looking over this catalogue is, that so far as instruments, tools and dental furniture are concerned, our brethren in England are far behind us. Most of the operating chairs are very clumsy in appearance; the forceps bear no comparison to those of American makers for adaptation; some of them look like hens after they've had their necks wrung by the kitchen maid. A rather novel automatic mallet is represented on page 90, reminding one of the pictures of the battering rams used in ancient warfare.

This much we will say, however, and that is, that in apparatus, &c., to be used in connection with nitrous oxide, in great strength and density of artificial teeth, and some other particulars, we in America are far behind. The difference between dentistry in America and England is mainly this; that we are more practical, they more theoretical; and that the fine arts in dentistry is carried to greater perfection on this continent than anywhere else in the world.

Messrs. Ash exhibit an enterprise in England, which Dentists in America can best appreciate.

THE "CANADA LANCET."—A Monthly Journal of Medical Science, edited by J. FULTON, M.D.; co editors, U. OGDEN, M.D., and J. W. ROLPH, M.D., Toronto, Ontario. $3 per annum.

A very excellently conducted periodical, for which we should judge there is plenty of scope in Canada. Every medical practitioner, and, indeed, every dentist, should subscribe to such a journal.

EDITORIAL.

THE APPOINTMENT OF DENTISTS TO HOSPITALS.

Although it may be rather premature to establish independent dental hospitals and dispensaries in Canada, we do not see why it would not be proper, but indeed highly desirable, to have a dental department in connection with all general hospitals, to afford to the poorer classes gratuitous advice and surgical aid in all diseases pertaining to dental surgery. It is not to be expected that these institutions can afford to pay the same attention to manipulations on diseased dentures as on diseased eyes; or that the various ills the teeth are heir to, will receive a like conservative consideration with those of organs more vital. The loss of all of the teeth is insignificant compared to that of an eye, but no reasonable person can assume this insignificant difference to be any argument for the sacrifice of the former.

It needs little argument to convince the commonest understanding of the importance of the teeth in the economy; and that proper treatment, whether applied to their salvation or removal, are matters involving no mere modicum of personal comfort, appearance and general health.

It is quite certain that the great number of teeth annually extracted in all general hospitals where a dentist is not attached, are not treated according to the golden rule, or the first principles of dental surgery. Hospitals do the best they can with the existing arrangements, and make no pretensions or attempt to preserve decayed teeth. Patients are well aware that the only relief offered is extraction, and as they are most frequently bad diagnosticians of their own trouble, hundreds of teeth are, no doubt, drawn, that might be saved. And even for this "*dernier resort*," hospitals are deficient in means and appliances. The stock of instruments is generally limited to a key of Garengeot—fell destroyer of alveoli!—and a few poor forceps. With such instruments the wonder is, not that teeth and alveolar processes are sometimes badly fractured, but that accidents are not the invariable rule. The sets of extracting instruments put up for medical men are not adapted at all for the most difficult and the most painful of extractions—that of decayed stumps of teeth—and in cases of urgency and desirous of relieving the agony of the sufferer, attempts are made to remove roots of teeth with instruments which were never intended to be used when the crowns had broken away, and the case is left, still more difficult, for a more painful operation by the dentist.

Unnecessary suffering is inflicted; a simple operation is surrounded

with dread and fear, and the hospital receives no small amount of discredit. One trial of hospital tooth extraction seems to satisfy many who are otherwise very courageous.

We are aware that the Montreal General Hospital almost invariably send difficult cases of tooth extraction to a dentist; and that the Montreal Dispensary has for some years given a sort of informal appointment to a dentist, the latter being the only connection of the kind in the country.

The great misfortune in most hospitals is, that medical students have come to regard the extracting of teeth as a legitimate part of surgery, which they may enter upon without tuition and without proper instruments; and that they are extended an amount of license with aching teeth presenting at the hospital, which would not be permitted for an instant with other diseases of the body, however slight. And it must be remembered that a patient will sooner excuse a tooth fractured by a dentist, whom it is known possesses the best adapted instruments, than by a medical student or even an old medical practitioner who makes no pretensions to skill in dental surgery.

We might enlarge further upon this subject, and illustrate the great advantages to the poor and to an hospital by a dental appointment, from the success attending the experiment in nearly all general hospitals in Europe. For many years regular established dentists have been appointed in British hospitals, who not only extract teeth, but aim principally to save, by scaling salivary calculus, conservative treatment of exposed pulps, treatment of alveolar abscess, &c. Filling is done to a considerable extent, where subscriptions have been liberal, but only by letter of recommendation from a subscriber or a governor. The extraction of children's teeth for regulating purposes has also formed an important part of the operations performed. Medical students have also received much valuable information by witnessing clinics, and receiving instruction in treating conditions of toothache which do not prognosticate extraction.

By the appointment of dentists to hospitals, these institutions are relieved of a share of labor and made more complete; and an important profession are enabled to contribute their experience and skill for the benefit of the poorer classes of the community.

We would urge the consideration of this subject by the governors of our hospitals. Any respectable dentist would, we are confident, be glad to give a portion of his time gratuitously to the good work; and in every locality in Canada where an hospital or dispensary is to be found, there are sufficient reputable dentists to divide the week between them, and each give an hour or so a day. B.

"AXES TO GRIND."

When men are doing their best and giving time and thought for the honor and elevation of their profession, how refreshingly encouraging to be told that they have "axes to grind." When hours that should be occupied in that diversion which is necessary to maintain the equilibrium of body and mind, are spent in labor for professional interests, and the auxiliaries of progress which have done so much to raise the standing of dentistry abroad, are attempted to be engrafted here, when every energy, and every ambition are brought to bear for the sake of the profession, what an immense incentive to learn, that some who appear to aid, assert behind your back that you have "axes to grind."

There are some men so intensely selfish and narrow-minded that they can neither be disinterestedly liberal themselves, nor believe in the honest sincerity of those who are. An egg is not more full of meat than they of suspicion. Doing nothing for the common good, except that by which they at the same time serve themselves, they have not the shade of a shadow of faith in one who asserts his work to be a labor of love. They detest egotism in others, but they will launch out the personal pronoun "I" in all its self-sufficient applications, and retire to rest, refreshed with the highest opinion of themselves. Whatever little aid they gave to the progressive movement in the profession, was done patronizingly, and they have the vanity to believe that, like the fable of the fly on the axle-tree of the chariot wheel who thought *he* raised all the dust, their little assistance was the only thing that secured success. Their whole thought is centered in themselves, and progress clashes with their private interests. Nothing restrains them from meeting fair competition by quackery and puffing, but the fact that public opinion is more advanced than even five years ago, and that there are too many dental quacks already. They owed the germ and growth of their own practice to the very means which in others they now despise; that humbugging dental man-trap the show case, contributed mainly to build up their business; fences were plastered with their posters, and the columns of the daily newspapers lied for them by contract at so much a line.

As public opinion changed, and professional elevation began, they abstained from open bragging, after the persuasion of friends and confreres, only, however, to break out again at spasmodic intervals. They appear to share in the work of reform; but stab progress in the dark. Perhaps they attend the meetings of the societies, but they take little interest in the real work, and are jealous of those who do. Possibly they keep aloof, thinking they will help to make efforts appear paltry by their absence. Those who see good likely to issue

from association, and who are active in organization, have "axes to grind." Glad to share in the benefits of reform, they are careful to avoid its toils; they pretend to approve of certain measures, which they secretly deride; they slight overtures made to them to co-operate, and then scoff at the best intention or the worthiest result in which they had no share. If the honor of the profession had depended upon their mental or bodily aid, it would have still been begging for disinterested resolution to win it a name. Analyze the motives of those who put their shoulder to the wheel when the time had come for dentistry in Canada to be elevated and honored, and the motives of those who sneer at every little or great effort to create an associative interest, and we have the truth in small compass. Posterity will give both their reward.

When a narrow minded man has nothing bad to say against a worker or a cause, and wants to say something which will have its flavor, he generally resorts to the sneer, the scoff, and the orthodox remark "he has axes to grind." It would be well for us individually and as a profession, if we would resent with indignation any attempt in private, which dare not be done in public, to malign a man who is zealous, and a cause which is good. A little more charity and a great deal higher sense of the moral obligation of every dentist in the land, to assist and not to ignore the various acts and agencies designed to dignify and educate our profession, would do some croakers an immense deal of good. There are a few such, between Fort Garry and Gaspé, who would be healthily improved by a daily course of Turkish bath and choking. What under the sun they were born for, except to grumble, must remain a mystery. It would be some consolation to read their obituaries, but for the reflection, that the evil a man does in his life time lives after him, and that his discontent and narrow-mindedness is contagious and sure to re-appear. Would not the philosopher surely immortalize himself, and make his name dear to all generations to come, who would discover a specific for the gloomy grumblers whose jealousy cankers the best feelings of their hearts, and who, true dogs in the manger, hate to see others take up the work they have scorned, and carry it to a successful issue?

They say that reformed thieves always want to become policemen, and we will generally find that those who cry "axes to grind" behind one's back, are the very ones who have made the most selfish use of any position they held, and who only point to the weakness of others, the better to turn away attention from the axes they want to grind themselves.

B.

LATE.

Owing to our greatly increased circulation, having now subscribers in every state of the American Union except three, in England, Scotland, Ireland, France and Germany, and to the attention necessary to be given to our own private practice, we could not avoid several delays in the issue of this Journal. Next year (Vol. 4) we will endeavour to have the publishing part of the Journal in the hands of a firm accustomed to it. We have no apologies to make. Dead heads will please spare their tears.

NEW YORK COLLEGE OF DENTISTRY.

Sins of omission will sometimes happen with the best conducted Journals. When too late to remedy the matter, we found we had omitted to state, that among the best of Dental Colleges flourishing, is the *New York College of Dentistry*, which held its annual commencement on the 4th of March. We acknowledge the receipt of the Annual Announcement from the Dean.

PERSONAL.

We had the pleasure lately of a visit from Prof. L. D. Shepherd, of the Harvard University, Dental Department, Boston, who had been getting sun-burned in a run down from Niagara to Montreal, and the sunshine of whose countenance is a decided consolation to those who think dentistry and sallowness synonymous. May the shadows of his *compagnon de voyage* and himself never be less! B.

CORRECTION.

In a late number we noticed the published Proceedings of the "Illinois State Dental Society," for 1870, and we stated that the Society was "a small one, having at its last meeting only twelve members present; and we proceeded to give due praise to the Society for the amount of labor performed. The Secretary, Dr. Smith, informs us the Society actually numbers 60, and at the last meeting there were from 40 to 50 present. Sixteen new members were admitted. Our mistake arose from taking the published list of members who answered to their names at roll call at the opening of the session, as the list of members actually present at the meeting.

This explanation of a mistake does not, however, detract one whit from the credit due to the praiseworthy associative zeal of the members of the Illinois State Dental Society.

TRAVELLER'S ACCIDENTAL INSURANCE COMPANY.

The above institution is one that should commend itself to every one, especially to those who travel. Some time ago we took out a policy, and a few days afterwards had an accident from a lancet, which disabled the right hand for nearly two weeks. The company paid us nearly double the amount we gave for the policy, while, of course, the latter holds good for any number of similar or other accidents during the year. Our friends would do well to examine into the system.

Since writing the above our assistant has had his right hand disabled by the bursting of a retort while making Bitrous Oxide gas. The Company promptly recoguized his claims.

OBITUARY.

We are requested by the family of the late Dr. Preterre, to insert the following obituary.

Died in the city of New York, October 30th, 1870, Peter Preterre, M.D., D.D.S. Dr Preterre was a graduate of the Pennsylvania College of Dental Surgery, and had practiced dentistry since the year 1847.

MISCELLANEOUS.

WONDERFUL WORK OF SURGERY.

MANUFACTURE OF A HUMAN FACE.

The Canton (Illinois) *Register* of a late date had this account of a wonderful surgical operation:

"There lives in this city a young lady named Lizzie Twineham: Some years ago, when she was but a young girl, she was attacked with an ulceration of the face, which entirely destroyed her nose, upper lip and nearly all the adjacent bones. By the time the ravages of the disease were arrested, she was the most hideous-looking being that was ever gazed upon. Her eyes and forehead were visible, but in the place of her nose and mouth there was nothing but a large unsightly hole, in which the raw and purple flesh was visible away into the throat. None could look upon her without turning away in horror. Her parents were poor, and she was compelled to leave home. She sought labor, as she was able and willing to work, but her presence was so disagreeable on account of her terrible affliction, that she could not obtain a situation. About four years ago she found herself out of employment, and with no home. She was advised to go to the poor house. Despair and wretchedness seemed to be her lot. Shunned as she was by society, and abandoned by all, her sensitive nature was racked with torment, and she seriously contemplated

suicide. Just at this time, a friend suggested that probably Dr. Wright, of this city, might be able to remedy her deformity and improve the appearance of her face. With tears in her eyes and with but faint hope, she called upon him. At first the doctor thought ir was a hopeless case, but the despondent and desparing condition of the girl's mind induced him to take the case under serious consideration. He consulted with Dr. J. H. Rainey, dentist, in regard to the feasibility of supplying teeth and the upper jaw, which had been entirely eaten away. After examination, Dr. Rainey thought he would be able to supply the deficiency. Dr. Wright then determined to enter upon the work of making a new face for the young woman.

The first business was to supply an upper lip. This was an exceedingly difficult and delicate operation. The disease had not only destroyed the lip, but it had resulted, in the healing process, in connecting the flesh of each cheek to the stub of the upper jaw bone in an unnatural manner. It was necessary to cut the flesh loose from the bone upon the inside. After this was done, and the wounds healed, a piece of flesh was taken from the back part of the cheek and transplanted to form a lip. This was a most extraordinary operation, but was completely successful.

The lip being formed, the next step was to supply a nose. This required several operations. A piece of flesh was taken from the forehead in such a manner as to scarcely leave a scar, and brought down and made to grow where the nose should be. Other pieces were taken from each cheek, and applied in the same manner.

"It was necessary that months should intervene between each operation, that the parts might become perfectly healed. The different operations were eminently successful, and the work is now complete. Dr. Rainey has supplied the teeth and a bridge for the nose, which holds it out in the natural manner. A stranger now meeting her would never imagine that she was once without nose or upper lip. She would pass in company without special observation on account of any deformity."

ANÆSTHETICS—THEIR RELATIVE SAFETY.

Professor E. Andrews gives, in the *Chicago Medical Examiner*, the following estimate of the relative danger from different anæsthetics, in 209,893 cases:—

Sul. Ether	1 death	to	23,204	administrations.
Chloroform	1 "	to	2,723	"
Mixed Chloroform & Ether	1 "	to	5,588	"
Bichloride of Methylene	1 "	to	7,000	"
Nitrous Oxyde	no death in		75,000	"

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ORIGINAL COMMUNICATIONS.

INFLAMMATION OF THE EYE FROM A DISEASED CUSPID.

BY THOMAS BROWN, L.D.S., THOROLD.

A lady suffering from severe inflammation of the eye for eight months, having in the meantime tried several eye curatives, and medical advice, all to no purpose, called at my office, and asked me if a tooth could produce inflammation of the eye. Being answered in the affirmative, she requested me to examine her teeth. They were in good condition, with the exception of the left superior cuspid, which she said had been filled in the States: the filling was still in, but had been bored through at some time, for the outlet of pus; into this opening there had been plugged cotton, which was pushed down into the canal. In answer to a question if she could remember how long it was since she had the tooth drilled, and what it was done for, she replied that there was a slight pain and swelling, and that she went to a dentist, some two years previous to her having trouble with her eye; that he drilled the tooth, filled it as above stated with cotton, told her to call in two weeks and have it permanently filled, which, she says, she did, and paid for it. Felt no symptoms of pain afterwards, (the fact was the cotton was left in or else replaced with the same material). On tapping the tooth, there was slight pain at the root; when the cotton was removed there was a foul smell. I cleansed out the cavity, found decay had extended down the canal: the sides of the tooth were no thicker than a goose quill, produced by foreign substances, the decay extended in like manner down the root; there was no appearance of inflammation of the gum near the root. The tears ran down the cheeks as in fistula lachrymalis; could not bear the least ray of light; the eye was very painful all the time. I told her that I thought it was the tooth that was causing the inflammation of the eye. Their was no granular growth on the inside of the eye-lids. Having asked other questions

there was not the least doubt in my mind but that it was the tooth that was the real cause of all the trouble. After I had given my opinion, and advised the extraction of the tooth, she said she was afraid, it being the eye tooth, and that she had made up her mind now to go to a doctor in the States, who had a great reputation for his skill and success in treating diseases of the eye. She left my office, and, in going down the street, met Dr. Palmer, asked his advice; he said, she had better go with him down to the office. She did so. After a careful examination, he said he would do nothing for the eye, until she got the superior cuspid extracted. Advised her to go to the dentist; next day she came back to me and had the tooth extracted. There was a quantity of thick yellow matter at the bottom of the socket. I cleansed out the matter and injected diluted carbolic acid. She then went down to the doctor; he gave her a bottle of eye-water. This was in December, 1869. She called in March, 1870, to say that her eye was as well as ever; that she did nothing more than apply the eye-water a few times to her eye after the extraction of the tooth. I saw her the other day; she is all right. April 6, 1870.

LYCOPERDON.

BY C. BREWSTER, L.D.S., MONTREAL.

I would like to call the attention of the Dental Profession to this well known fungus, commonly called Puff Ball. Though for many past generations a few scientific men, and a great many "old women" in the country, have known it to possess certain properties as a styptic, its great value as a means of arresting hæmorrhage has never been properly appreciated.

This wonderful member of the Fungi family attains its full growth in a single night,—a considerable undertaking for nature even in this country, where it attains only the size of an ordinary apple; but when we take the "Lycoperdon Gigantum" of the British Isles, which in those twelve hours arrives at a maturity of two or three or four feet in circumference, all other instances of the rapid growths of nature dwindle into insignificance. Its substance is made up of innumerable microscopic cells, almost beyond calculation. Some savans have placed the number contained in one of the largest sizes, at the incalculable figure of 47,000,000,000, and nature manufactures them all in one night.

Thirteen years ago I commenced using the Lycoperdon in my practice, and in all cases it was attended with great success; so that in course of years I gradually abandoned all other material, officinal and non-officinal,

and to-day I regard it, without any exception, the best known remedy wherever it can be applied locally. Its mode of application is very easy, being simply to take a piece of the fungus large enough to fill the cavity left by the extraction of the tooth, and pressing it firmly in, hold it there for a minute. If there is blood still flowing, place another piece on the top of the first, and again hold it firmly there. If this does not yet arrest the hæmorrhage remove all that you have put in the cavity and repeat the operation. Two or three applications will cure the worst case. For any other description of wound, a piece large enough to cover its surface, held firmly on, or, if circumstances will admit of it, bandaged on. For cases where it is necessary to arrest the flow of blood from a leech bite, a small piece of this material pressed firmly on the spot for a moment will completely arrest the flow.

I have never tried it, but I think in cases of bleeding at the nose, if the nostrils were cleared as much as possible of the blood, and a good-sized piece of Lycoperdon was held beneath them, tightly squeezed between the fingers, the patients being directed to inhale with all their force the fumes that arise from this fungus on pressure, would have the same effect on the lining membrane as if brought into actual contact with it. The smoke arising from the combustion of the Lycoperdon is a powerful anæsthetic.

KEEPING CAVITIES DRY.

By X. Y. Z.

A new application of the rubber dam may be made by simply folding a piece of it in a napkin and using the latter as usual. In some cases the dam is difficult to apply, and the above mode will often answer. Moisture cannot pass through the cloth because of the intervening rubber: and those who cannot use the dam ligatured, may get along fairly by folding pieces in this way, and covering the ducts, making the patient hold down that upon the sublingual glands, with one finger of the hand farthest from the operator.

FINISHING OXY-CHLORIDE OF ZINC FILLINGS.

BY W. G. B.

It may seem almost irrelevant to use the term "finishing" in connection with oxy-chloride of zinc fillings as it is understood by us in connection with fillings of metal; but possibly many failures with the former have their origin at this very stage of the operation. We see these plastic

fillings give way because the edges have been slovenly smoothened off, or not smoothened at all, and because small particles have been left overhanging the edges, or the edges have not been carefully packed. In any of the above circumstances, the secretions of the mouth will effect and destroy it, however dry it may have been kept while hardening.

One simple rule works better than the old way of finishing with a spatula; viz., to finish with a fine piece of dry starched linen, using it as we use corundum tape on the surface of a gold filling. The friction of the linen assists in drying the filling, while it causes a greater coalescence of the particles, and enables us to give the best finish possible. A drop of collodion on top when the filling is dry, and left there for a few hours, is indispensable.

PROCEEDINGS OF FOREIGN SOCIETIES.

NEW YORK ODONTOLOGICAL SOCIETY, APRIL 18.—Dr. Clowes, in reporting on "Operative Dentistry," thought failure in grinding surface cavities due to imperfect excavation of fissure extremities; thought too much attention given to the centre of cavities, and too little to the extremities of fissures; spoke of a peculiar species of hard tartar that he sometimes finds on the roots of teeth; called it alveolar calculus, and thought it deposited from the membrane lining the socket; could not conceive of its coming from any other source; thought there would always be found evidences of salivation where it exists. In approximal cavities he separates with the file, mostly on the inner side, and in a concave manner, forming what he calls an approximal arch; always separates with the file, and sometimes builds gold out at the apex of the arch near the gum in such a way as to keep the teeth apart; considered the wisdom teeth among the best in the mouth; thought they had fewer weak points than the other molars; said the first molars are quickly formed and quickly lost, whereas the wisdom teeth are longest forming and can be longest kept; thought their loss generally due to lack of care; extracts the first molars when the second ones come in; considers them the worst teeth in the mouth; in filling, uses adhesive gold exclusively; spoke of the defects of approximal fillings at the base, and considered it as probably due to soft foil. In such cases cuts out the softened portions, and fills with amalgam, leaving the firm part of the gold standing; thought not the slightest harm could come from putting gold and amalgam in contact. As to dental instruments, he thought them poorly

tempered; considered it a great fault, and asked if there was no talent in the profession that could produce a good instrument.

Dr. Bronson thought there was much truth in Dr. Clowes' remarks in reference to instruments; and could not get from the depots such as he desired, therefore tempered his own; does this by plunging in sperm oil and lamp-black; used lamp-black to make the oil thick.

Under the head of "Incidents of Office Practice," Dr. Bogue, referring to Dr. Clowes' advocacy of the superiority of the wisdom teeth, spoke of the well-known effects upon the teeth of early cutaneous diseases, as measles, scarlatina, etc., and thought that the wisdom teeth, being more slowly developed, and running the gauntlet of a larger number of these diseases, would often be injuriously affected by them. Referring to the extraction of the first molars, he said that vocalists never reach a high degree of eminence if the teeth are not all retained and the arch kept perfect. As regards what Dr. Clowes calls "alveolar calculus," he does not recognize the lining membranes of the socket as capable of secreting calcific matter. He related a case of a young lady whose teeth had been filled and re-filled by a fine operator, and yet decay constantly appeared around the approximal fillings. Had never had just such a case, except one ten or twelve years before. Believing it impossible to save them by filling, he chiseled the approximal surfaces on the lingual side, in accordance with Dr. Arthur's method, so that the brush and tongue would keep them clean. In cases like this he thought it well to consider this method of separation as compared with that of restoration by filling. He thought our Maker knew how many teeth to put in the mouth, and what shapes they ought to assume; but, at the same time, whether in accordance with the Darwinian hypothesis or not, he was aware that modern civilization had done much in changing the shape as well as the structure of the teeth, and thought we should, while considering the ideal shape of a strong tooth, which could be restored, also bear in mind that of a frail one, which might not bear restoration. Between these extremes he thought there existed all varieties, demanding the exercise of an educated judgment in their treatment.—*Cosmos*.

State Dental Society of Pennsylvania, June 13th, 1871.—Dr. S. H. Guilford, of Lebanon, read an essay on "Mechanical Abrasion of the Teeth," and recommended as a remedy the wearing of a metal plate covering the roof of the mouth and the abraded surfaces of the teeth.

Dr. Moore thinks rubber would be a better material on account of its being a non-conductor.

Dr. Robbins said that often in these cases we find apparently a chemical action and destroying influence set up, so that some teeth are worn away more than others; and formerly made a cap to cover and protect the tooth until secondary dentine was thrown out; now prefers filling with gold, using the mallet, and, if necessary, destroying the pulp.

Dr. McDonneld prefers filling such teeth, but does not advocate always building to the original length, and restoring the contour; frequently simply fills flush with the edge.

Dr. Hoffer thinks the abrasion of teeth is not caused solely by the chewing of tobacco, but that it produces a disorder of the nervous system, which causes the grinding of the teeth during sleep. He thought the attrition was not due so much to the small particles of mineral substance in the tobacco as to its chemical influence.

Dr. Guilford said that, in one of the cases mentioned in his essay, the teeth were very strong and dense. The cause of the upper teeth becoming more abraded than the lower, is due to the latter being smaller, and having less of the dentine exposed.

Dr. Moore said that we very rarely see cases of abrasion in the mouths of females.

Dr. Welchens thinks that when there is no direct mechanical cause, it is by reason of a reduction of vitality, especially as persons advance in life; thinks that in most cases the abrasion is attributable to the use of tobacco.

Dr. Robbins said that abrasion sometimes continued after persons quit the use of tobacco.

Dr. Welchens had not noticed this, but thought it was due to decreased vitality after the person had discontinued the use of tobacco.

Dr. Moore in one case found the teeth had been much decayed, but decay had ceased, and what was naturally the softest had become the hardest.

Dr. McDonneld thinks tobacco has more to do with abrasion than anything else. Abrasion, however, sometimes occurs when no tobacco is used, but is not so extensive.

Dr. Elliot recalled a case where the abrasion continued after the discontinuance of the use of tobacco.

Dr. Robbins recalled the case of a physician who had used tobacco for forty years, and after discontinuing its use his teeth wore down more rapidly than before. In the South, where persons do not allow the tobacco to lay quietly in the mouth, but keep it constantly in motion, the abrasion of teeth is the rule, and not the exception.

Dr. Young thinks the reason of the upper teeth becoming more abraded than the lower is by reason of the lower jaw being movable, and the lower teeth not having so much of the dentine exposed. The lower teeth operate upon the upper as the hammer upon the anvil.

Dr. Samuel Welchens read an essay on "Definite Human Structure." The essayist entertains the opinion that the teeth of man are the highest type of organized matter.

Dr. Barker thinks the dentinal structure of man is not superior to that of the gorilla. The nervous system, too, in some animals is similar to man; that of the chimpanzee resembling that of man, and not only this, but the vocal organs also are similar. The dog has memory, shame, and fear, as in man, differing only in degree. There is a retrograde metamorphosis in the human teeth. There are no really perfect sets of teeth.

Dr. Welchens denies that there is retrograde metamorphosis. By proper modes of living there is sufficient power in the system to develop a perfect denture.

Dr. Barker said that if we improve the general health of patients, and secure increased nutrition, perfect teeth could finally be obtained. We must also advise against the marriage of unhealthy persons. The jaws of Americans are almost universally narrow, and it is almost impossible to preserve all the teeth. The second molars are usually better than the first, because, just before the development of the first molar, there is a greater demand for osseous material to build up the general structure, and, as the teeth are only appendages, they suffer; thinks best therefore to sacrifice the first molar sometimes when there is an overcrowded condition of the jaws, and especially when the tooth is very defective.

Dr. Robbins thinks that the first molar should by all means be preserved to secure a better development; does not advocate its removal in the correction of irregularities; and if it be defective, would remedy the same by proper treatment and filling.

Dr. Moore thinks that the extraction of the six year molars should be only resorted to as the lesser of two evils,—the deterioration of the teeth and the narrowing of the jaws.

Dr. McDonneld advocated the preservation of the first molar. If the attempt to save it failed, the treatment was not commenced early enough.

Dr. Guilford thinks that when defective six-year molars are retained the other teeth are injured; does not wish it so, but thinks, with Dr. Barker, that the day will come when such defective first molars will be extracted.

Dr. Essig explained the manner of using Dr. Jack's matrix. Teeth are first separated by chisels or otherwise. He uses Turkish boxwood wedges. Form the cavity, smooth the surfaces, and insert the matrix. When an approximal tooth is out, take an impression, and make a matrix of rubber, fitting up against the surface of the tooth to be filled, or against the matrix, placed in position, and extending to the nearest tooth. When a tooth is isolated, a band of a suitable material may be fitted around it. With the matrix a filling may be made more solid than in any other way.

Dr. M. H. Webb read an essay on "Anæsthesia."

Dr. Guilford coincided with the essayist; had used nitrous oxide principally; thinks it the best anæsthetic we have for minor operations, and safer than ether or chloroform; thinks it more convenient to use the small rubber bag, but has a gasometer. In this he differs from the essayist.

Dr. McDonneld has given ether, chloroform, and nitrous oxide, but deprecates the use of any anæsthetic when it can be avoided; has noticed injurious effects following the use of these agents. These effects may not be noticed until some time after the administration of the anæsthetic.

Dr. Welchens. Nervous affection sometimes follows the extraction of teeth without anæsthetics. He sanctions the views of the essayist, thinks the shock of the operation in most cases is more injurious than anæsthesia; uses a mixture of ether and chloroform; has not administered nitrous oxide to any great extent, and does not succeed so well as with the mixture of ether and chloroform, having administered the latter for about twenty years. He related a case of a young person whose nervous system was much excited; extracted two teeth by the use of chloric ether when the excitement subsided; no bad effects being developed until one week later, when increased nervous excitement ensued, amounting almost to a spasm. This effect lasted some time, and seems to have been the result of the shock in a somewhat deranged nervous system. In diseases of the heart he would almost as soon give ether as perform any extended dental operation without it, because the shock might be quite as injurious. With the mixture of ether and chloroform, and having plenty of water at hand, with a recumbent position, he feels safe in administering the agent to almost any one.

Dr. McDonneld thinks the use of anæsthetics encourages the useless and reckless extraction of teeth.

Dr. Webb. The fault lies with the operator and not with the anæsthetic.

Dr. Moore prefers ether, as it does not leave the patient so depressed

as does chloric ether or chloroform; related a case in which he administered ether, which was followed by undue excitement, preventing the extraction of the teeth; permitted the effects to pass off, and administered chloric ether the second time. The patient began to sink, when water, artificial respiration, mustard plasters, etc., were brought into use, and after some time all was well.

Dr. Webb thought the over-stimulation of the cerebrum, twice in succession, was the cause of the trouble in the case related by Dr. Moore; for although ether acts first as a stimulant, it also acts with equal power as a sedative. In carrying the anœsthesia thus far the operator should hurry past this point and involve the cerebellum and pons varolii. As a general thing, he would rather trust a dentist to administer an anæsthetic than a physician; and does not think it augurs well for the advancement of the profession where a dentist calls in a physician to administer these agents for him.

Odonto Chirurgical Society, Edinburgh, Scotland, 11th March, 1871.—We acknowledge the receipt of the Transactions of this Society for March, from which we make the following extracts:

The President called on Dr. Hogue for his paper, "Remarks on Filling Teeth with Gold."

Mr. President and Gentlemen,—I have chosen this subject with the view of showing some instruments and appliances, which I have had an opportunity of seeing recently, and which, being new to me, I thought might interest you. Before doing so I would like to give a little history of my own experience in gold filling.

It is sixteen years since I commenced to use gold in filling teeth, and at that time, and previous to that time, soft or non-adhesive gold foil only was used. Gold foil at that time was principally used in the form of rope, made by rolling up a strip of gold foil. The instruments used were wedge-shaped in the blades, and not serrated at the points, and it was a very difficult matter and required great skill to fill the cavity well with these instruments.

A very great improvement was introduced about this time, namely, serrating the points of the instruments; this facilitated the introduction of the gold very much. I used the rope for some years in filling teeth, with the smooth-pointed instruments, but soon adopted the serrated points.

My next alteration was in the adoption of cylinders, with the formation of which you are all familiar, and found this a decided improvement on the rope.

About eight years ago I was shown a new form of instrument and point, adapted for working soft foil rolled into round balls of different sizes. This instrument was intended to be held like a writing-pen, and the gold was packed into the cavity with a twisting kind of motion. The blades of this instrument were small, and bent at different angles with the shaft; they were square shaped, tapering to the point, which was rubbed on an oilstone so as to give it four sharp edges. Several of these I hand round. Nothing, I think, could surpass this instrument and way of working for producing good soft foil fillings. The blades are easily made, and easily kept in order by rubbing their surfaces occasionally on an oilstone.

I have become more and more convinced, however, from experience, that soft foil alone cannot altogether be depended on for preserving teeth on account of its liability to wear on the surface, where it is exposed to mastication. I allude more especially to lateral and compound cavities.

It is just exactly sixteen years since Dr. Arthur, at that time of Philadelphia, announced that he had discovered a new method of using gold foil, which was to pass the gold foil through the flame of a spirit lamp, and to pack it into the cavity with sharp serrated points. The term "adhesive" was applied to this form of gold. The merits of this form of gold are that the surface of fillings made of it is so hard it does not wear, and keeps such a good polish that food and other matters do not adhere to it; also that the filling can be built out to any shape. This adhesive property is also possessed in an eminent degree by sponge gold.

I have been more or less in the habit of taking advantage of this adhesive property of gold foil ever since its introduction, more especially in connection with soft foil, after filling the cavity as well as I could with soft foil, packing in the adhesive with sharp serrated points, or the instruments already handed round. This to a degree prevented the wearing.

I am convinced, however, that the best fillings are made by using adhesive gold entirely, either in the shape of foil or sponge gold.

There are some difficulties about using adhesive gold which tend to prevent its more general adoption. It requires a longer time to introduce the filling; it is more fatiguing to both patient and operator; it is more difficult to adapt the gold close to the tooth, and make good borders; it must be kept absolutely dry during the entire operation, as the least moisture is fatal to adhesion; and last, but not least, adhesive fillings must be more expensive than non-adhesive.

A great deal has been done by ingenious dentists to modify or overcome some of these difficulties. The labor and fatigue of the operator are much diminished by using the "automatic plugger." The one I

hand round is what is known in America as Dr. Salmon's. The blow can be made hard or soft by turning round the cover at the top. The shapes and serrations of the pluggers also have been so beautifully adapted to the purpose as to save much time and produce the best results. I hand round a series of points for working this kind of foil. They form what are known in America as Dr. Varney's points. I would direct your attention to what I have marked as foot instruments; they are remarkably well adapted for driving in layers of gold on the surface of the filling in building up what are known as contour fillings. I would also call your attention to the serrations on the instruments, which are beautifully fine, and leave the gold after it is packed as nearly solid as possible, and absolutely free from pits, which is essential to first-class work.

Considerable difficulty is experienced in commencing adhesive gold stopping; in getting the first portions of gold to remain firm, any motion in these first portions is fatal to a good stopping. To prevent this, one or two small holes or pits should be drilled into the tooth where the filling is to be commenced; these can be easily filled, and once the gold is packed into them, if moisture is prevented from reaching the cavity, the remainder of the operation becomes comparatively easy.

The necessity of keeping the filling dry during the entire operation has given rise to a very ingenious contrivance, called the rubber dam. A little square piece of sheet india rubber, not much thicker than writing paper, two thicknesses of which, as specimens, I hand round, in which two or more holes are cut, is slipped over the tooth to be filled, and one or two adjacent ones. A ligature of well-waxed floss silk is then passed round the teeth, and the rubber drawn up close to the gum; the ligature is then securely tied. The upper corners of the rubber are kept out of the way by an elastic band passed over the crown of the head, the end of which is attached to adjustable clamps. By means of this contrivance the mouth can be closed and saliva swallowed without danger of wetting the filling. By means of it also the whole of the cervical wall of the cavity can be exposed in lateral cavities, even when it is below the level of the gum. I hand round a lower jaw with the dam adjusted.

In filling front teeth with adhesive foil great care is required to get the gold close against the tooth substance to prevent discoloration. In using soft foil one bit of gold slides on another, and the whole stopping is pushed against the walls of the cavity, when additional gold is packed into the centre of the filling, so that the gold comes to be very close against the walls of the cavity. But unless the adhesive gold is packed close against every part of the wall as you proceed, no amount of after-packing can change its position. I think this will account for the blueness of which

some complain in front teeth after being filled with adhesive foil; but it is only the result of want of care.

The great superiority of adhesive foil is, I think, shown in the more modern way of operating on lateral cavities in bicuspids and molars, namely, cutting into the cavity with chisels through the grinding part of the crown. This necessitates the exposure of a surface of the filling to great force in mastication, which is well borne by adhesive gold. There is no necessity either for having a definite retaining wall on the grinding surface, a little dove-tailing being sufficient; or, if the lateral walls do not admit of this, a hole can be drilled into a solid part of the tooth a little further back, the intervening part of the tooth cut out a little, and the lateral filling anchored into it.

In building up these large fillings the heavy gold foils will be found very useful. I have used No. 120, which is just like thin gold plate, and find it works very easily, used, of course, in single thicknesses.

I recollect at one of our meetings a gentleman asking, "How the Americans did those large gold fillings?" With adhesive gold and the rubber dam it is only a question of time and remuneration—two circumstances, however, which, I think, in this country, are almost fatal to large good gold fillings. There are few who have any idea of the time required to complete a large adhesive gold filling; two or three hours or even longer, will be sometimes consumed on the mere packing of the gold, leaving out of consideration the preparation of the cavity, and finishing the filling. There are not many patients here who would submit to this, and comparatively few who put such a value on their teeth as to induce them to pay the dentist adequately for his labour and material. Moreover, it has never been the custom of this country to pay large sums for filling teeth, artificial teeth being what the dentist counts most on as the source of his income.

Dr. Roberts.—Mr. President, not having anything of importance or interest to show the members of this Society at this meeting, perhaps you would kindly allow me to take notice of two cases of vicarious hæmorrhage that I have met with since our last meeting.

A young lady, of about nineteen years of age, the picture of health, with a bright complexion, called to have a lower molar removed under the influence of nitrous oxide gas, which was done satisfactorily. This was in the morning, and in the evening a messenger was sent for me to come and see this young lady, as bleeding had broken out to an alarming extent. I called at once, and was much struck with the change of appearance of my patient; she had a basin before her containing a large

quantity of blood, and blood was flowing from the alveolus. The young girl was ashy pale, with a blueish ring strongly marked about the eyes; observing this appearance for the first time, I quietly asked the attendant if the young lady was at the time changing in health. I was told such was the case, and that she had lost a large quantity of blood during the day from the mouth.

Upon examining the mouth I found a large clot of blood half filling the mouth; having removed this and washed out the mouth and bleeding alveolus with warm water, I then gently introduced pledgets of cotton, steeped in Dr. Richardson's "xylo-styptic æther," filling up each fang cavity gently, but firmly, then laying a piece of cotton saturated with the styptic on the top of that pressed into the cavities, holding it *in situ* with a finger. In ten minutes all bleeding ceased, she was then removed to bed, but while doing so she fainted. She was carefully watched for some hours by myself, and all night by an attendant, but nothing further was required but careful nursing.

I cannot refrain, Mr. Chairman, of here speaking highly of this preparation of Dr. Richardson's; for my own part I feel an amount of confidence now, since we possess it, when these troublesome cases occur, that I never felt before, having used it in several cases with uniform success, either as spray, or, as in the above case, merely filling the cavities with cotton saturated with it, and then keeping gentle pressure until the bleeding is arrested. I never now have that anxiety and beating of the heart when my door bell is rung during the night, as some of you, as well as myself, have experienced under such circumstances, knowing I have a sure friend in this agent.

I may mention I have known of cases that have continued to bleed during the continuance of the menstrual period, only stopping with it.

I may take this opportunity of saying for the guidance of young practitioners, that I generally take a look for the characteristic signs seen about the lower eyelid. If I suspect they are in this state of health, I, if possible, dress the tooth and put off the extraction for a week or so.

In the above case I admit I was completely deceived; her complexion was so clear and rosy.

I may mention this patient, about three weeks before this attack of hæmorrhage, had a couple of molars extracted under the influence of the nitrous oxide gas, and experienced no trouble at that time from bleeding. She suffered so much upon this occasion, from so great a loss of blood, that it was fully a fortnight under careful treatment before she recovered its effects.

The other case, Mr. President, was that of a young lady, of about

twenty-two years of age, a daughter of a medical man in this city. She had a bicuspid tooth extracted while under the influence of the gas; little or no bleeding followed the extraction at the time, but, strange enough, exactly a week after the removal of the tooth a slight bleeding took place from the alveolus.

The remarkable point in this case was the fact that this patient had been under treatment for two years from the suppression of this natural discharge, and the interest in this case arises from the fact that when this bleeding came on was the proper period that the monthly change should have taken place.

I am hopeful, therefore, from this apparent effort of nature to relieve itself, she may soon be restored to health. I may once more say, and in conclusion, no interference was made to arrest the hæmorrhage; it was not to any great extent, and might prove beneficial by being allowed to flow in moderation.

We all have been asked, I daresay, to press the gum together after an extraction of a tooth. It is an old-fashioned custom, but in my estimation a good one, as I have seen a good deal of trouble from bleeding kept up by the sharp edge of the process, which being pressed into its position the bleeding ceases without any other treatment in most cases.

SELECTED ARTICLES.

MICROSCOPICAL FISSURES IN THE MASTICATING SURFACE OF MOLARS AND BICUSPIDS.

By J. H. McQuillen, M.D., D.D.S., Professor of Physiology in Philadelphia Dental College.

In a previous communication attention was directed to the fact that the minute openings or fissures found in the grinding, approximal, buccal, palatine, and lingual surfaces of molars and bicuspids frequently lead to cavities of some size. Through the kindness of my friend, Dr. R. W. Varney, of New York, who placed in my hands some time since a number of microscopical preparations, I have an opportunity of demonstrating in the most conclusive manner the necessity of immediate attention to such cases.

In the accompanying illustration (which I had made of a longitudinal section of an inferior molar, as seen under an $\frac{8}{10}$ objective and No. 1 eye-piece, magnifying sixty diameters) it will be observed that a minute fissure, invisible to the naked eye in the section, extends from the bottom of the sulcus on the grinding surface of the tooth, through the enamel, almost to the dentine, and enlarging at the lower part into an oval cavity. This is entirely the result of defective formation, the enamel prisms having failed to coalesce at that point, and thus a condition is presented favorable to the retention of fluids and semi-solids, which undergoing decomposition would speedily destroy the thin septum of enamel covering the dentine. In the latter tissue, closely contiguous to the enamel, a number of black spaces (the *interglobular spaces*) will be seen. Here again is located defective structure and a prolific predisposing cause of decay. The large space represents a carious cavity commencing on the approximal side of the tooth.

In a paper read before the American Dental Association at the meeting held in Boston, August, 1866,* giving the results of a personal examination of the *interglobular spaces*, I remarked, "As evidence of the practical bearings of these investigations, it may be well to direct attention to the fact that the existence of the spaces in teeth which have completed their growth must be regarded as an *abnormal condition*, predisposing such teeth to decay, and that when either by mechanical action,

* Dental Cosmos, vol. viii. p. 113.

as by a fall or blow, or by the penetration of external caries such spaces are reached, the *disease here would run riot;* hence the importance of care on the part of patients and operators to have the most minute cavities filled; for though reached only through a microscopical opening, the result would be the same, while if protected from the action of external influences or the *exciting causes of decay*, this *predisposition* might remain dormant for a lifetime, as is sometimes the case with other diseases."

With no disposition to revive a useless discussion, or to dwell upon the very unreasonable, not to say absurd, objections and denials which were offered to the communication by doubtless well-meaning but mistaken men, at the same time I cannot but regret that they influenced the opinions of others who, reposing implicit faith in their acuteness and judgment, very naturally regarded the objections as of a valid character. until an opportunity for observation convinced them to the contrary. Such was the case with the gentleman who handed to me the specimen under consideration.

It is to be hoped that the illustration offered will teach a valuable lesson to those who have been in the habit of dismissing their patients with the statement that " there are some small cavities in the teeth which can be left without disadvantage until another time." It also shows most clearly the necessity of following up the fissures, which generally extend from a central cavity of decay in the grinding surfaces of molars; careless operators contenting themselves with only removing the caries from the central cavity, leave these fissures untouched, and, as a consequence, decay progresses unobstructed and unnoticed, until the tooth is rendered a mere shell. —*Cosmos.*

ARE ARTIFICIAL TEETH CAPABLE OF PRODUCING SALIVATION.

BY P. A. O'CONNEL, M.D., Boston.

My attention has been called to a case which points to the possibility of the occurrence of *salivation* and the *constitutional effects of mercury* from the use of artificial teeth, and the importance of the circumstance has seemed to be sufficient to justify a mention of it; so that inferences may become either corrected or confirmed by the observations of others of the profession.

The patient, in the case referred to, was a lady, who had used the artificial teeth that are now accused of having produced trouble between two and three years. Before using them, her general health was good. While using them, her health became poor [*wasting away*], and

proceeded gradually from bad to worse, resisting every mode of treatment. She exhibited no special cause of illness, until the occurrence of salivation and sore mouth drew attention to the teeth. Then it was found that the plate upon which the teeth were mounted, which was a suction plate of the red rubber kind, presented a corroded appearance on the surface which came in contact with the roof of the mouth. And the circumstance that this kind of rubber plate is made up to a great extent of the sulphuret of mercury, suggested the possibility of the general ill health resulting from this cause.

The teeth were removed of course. The mouth became well speedily; and without any further treatment the lady's general health began to improve immediately in a very remarkable manner.

Upon mentioning this case to some medical gentlemen, it recalled to the mind of one of them another instance of salivation, resulting, apparently, from the same cause. Here, too, the disuse of the red rubber plate allowed the mouth to become well; and a set of teeth mounted on dark rubber was used afterwards without any inconvenience resulting.

The red rubber which is used in making the plates upon which artificial teeth are mounted, receives its color from the sulphuret of mercury, which is mixed with it very intimately, and constitutes generally about one-third of the mass. This preparation of mercury is very insoluble, resisting, in the chemist's laboratory, the strongest acids; and it is difficult to understand what combinations can have taken place in the mouth to render it liable to absorption.

It is rendered soluble by mixture with the sulphide of potassium, but one would suppose that it would be protected sufficiently by the rubber with which it is thoroughly mixed and baked.

Are artificial teeth, under any circumstances, capable of producing salivation? *Boston Med. and Surg. Journal.*

HYDRATE OF CHLORAL.

The past six months have produced a multitude of articles bearing upon the therapeutic value of this recent addition to *Materia Medica.*

Professor S. G. Armor (*Michigan University Medical Journal*) gives the following conclusions in regard to its action. We give them entire, as they seem to us, in the main, to be very just:—

1. Although a valuable sedative in cases of morbid wakefulness and general irritative action of the nervous system, it cannot always be relied on as a substitute for many of the old and well-tried anodynes and nervines of the *Materia Medica.*

2. In a certain proportion of cases it produces unpleasant symptoms, such as gastric distress, difficult breathing, partial paralysis of the organs of deglutition, great restlessness, and sometimes coma. These are largely exceptional, however, to its general action.

3. These unpleasant symptoms are, in many cases, obviated by administering an opiate in small sustaining doses to the nervous system before administering the chloral—say one-twelfth of a grain of morphine or its equivalent of some other preparation of opium. The action of small stimulating doses of opium, administered twenty or thirty minutes before the chloral, appears to be antagonistic to its sometimes depressing effects.

4. The action of chloral is somewhat peculiar on the brain; it intensifies the action of alcohol by adding to its intoxicating properties. Great care should be exercised, therefore, in administering both agents at the same time, and in administering chloral with chloroform or ether.

5. It also intensfies the action of the so-called "*delirients*" of Headland, namely, belladonna, hyoscyamus and stramonium. Full doses of neither of these articles should be administered with full doses of chloral.

6. It is very sensitive to certain chemical re-agents, especially those of organic origin. It should not, therefore, be allowed to stand long dissolved in syrups; nor should it be combined in any mixture containing organic matter. It should be dissolved in simple water, and, like all salines which act by absorption, should be well diluted either before or after taking.

7. It should never be administered on a full stomach, neither an empty one; intermediate periods are better. A good rule is to select a period when the stomach is empty, and have the patient take a small crust of bread, or a cracker, ten or twelve minutes before taking the chloral.

8. Its action is somewhat transient. In two or three hours the dose must be repeated if the first produces no effect, or if we desire to protract the action of the drug. In urgent cases two or three doses can be administered at shorter intervals.

9. The dose varies in proportion to the amount of irritatibility, or morbid wakefulness. Eight or ten grains, repeated every hour, or a larger amount every two hours, until twenty or thirty grains are taken, is usually sufficient to secure the specific action of the drug; although in severe cases much larger doses may be administered with safety. In a severe case of delirium, occurring during the progress of a continued fever, in which all the usual resources for securing sleep had failed, I advised that the patient take a drachm of the chloral at one dose. It

had no other effect than that of producing quiet and refreshing sleep. The patient had taken several twenty-grain doses without any effect. These large doses, however, are not advisable, and should never be resorted to except in desperate cases, when other means and smaller doses had failed.

10 The protracted use of the drug is not advisable. It should be prohibited. It weakens the general vital forces, destroys the healthy tone of the nervous system, and tends to the production of anæmia.—*N. Y. Med. Jour.*

CONSERVATIVE DENTISTRY.

By George H. Cushing.—Read before the Chicago Dental Society.

The subject assigned to me for this evening, is one, the importance of which I think is not properly appreciated, and in attempting its treatment, I am met at the outset with the inquiry which I know is made inwardly by many minds if not outwardly by many lips: "What is conservative dentistry?"

I should not perhaps have thought it necessary to attempt any elaborate definition of the term, if I had not heard two gentlemen of the profession, among the most intelligent and advanced of my acquaintance, making the inquiry as to the meaning of the term which constitutes the heading of this paper; so, though the matter seemed so clear to my own mind, I have upon reflection concluded that it is very probable that the term may convey little significance to many minds, and therefore demands that it should be as briefly defined as is consistent with a fair understanding of the subject.

Conservative is defined by Webster as "having power to preserve in a safe or entire state, or from loss, waste or injury; preservative." It comes from the Latin "con," and "servare," to keep, to guard!" The term has been greatly in vogue for several years past, applied to general surgery, though it is doubtful if any uniformity of definition prevails among medical men.

Prof. Rae, of Rush Medical College, says: "Conservative surgery is conventional, meaning as I understand it, preservative surgery, and is generally applied to the place between extremes. It is usually applied as antipode to heroic surgery."

Professor Gross in his work, in the chapter on "Excision of Bones and Joints," says: "Excision differs from amputation in this, that while in the latter the bone is removed along with the soft parts which surround it, in the former the bone alone is cut away, the integuments, muscles

and other tissues being retained, in order that they may contribute to the future usefulness of the limb, or in other and more comprehensive language, while in the one case all the structures are destroyed, in the other as many as possible are preserved. Hence this department of surgery has very appropriately been denominated 'conservative surgery,' and it is most gratifying to know that it constitutes one of the leading characteristics of the healing art of the present day." He thus seems to confine the term in its application, to that especial division of surgery.

Again, Dr. Davis, of New York, has published a work entitled, "Conservative or Mechanical Surgery, as exhibited in remedying some of the mechanical causes that operate injuriously, both in health and disease." Thus, there would seem to be no authoritative definition of the term among surgeons, yet I believe there is a broader and deeper significance to the term than any of the definitions above given would seem to imply, and one which is generally felt among surgeons, although perhaps difficult to define. I think it clearly has reference to those advanced methods of practice, which have of later years become so general in any and all departments of surgery, which tend to lessen the frequency of operations involving great loss of structure, either by substituting less formidable ones, or by anticipating disease, so that in many cases no operation at all is necessary.

The surgeon following this higher order of practice thus becomes the conserver—preserver—his province is, "to keep," "to guard"—not only the life and health of his patient, but also the integrity of his body to the very fullest extent.

If, then, there is this important application of the term conservative in relation to general surgery, how much more emphatically should it apply, as in reference to the specialty of dentistry.

It is true that the dentist has not to operate on organs or parts of the body involving as a rule, such important relations to the vital functions, or to locomotion, or to general usefulness, as the general surgeon has; nor do his operations often threaten danger to life or general health, but his field is a very important one, and upon his successful operations, or otherwise, often depends to a great extent, not only the comfort, but the health of his patient, and his skill should be as conscientiously applied as though he were operating on more vital organs. He is constantly called upon to decide between the immediate loss of organs of the economy, or the effort to preserve them In his case it is utter loss of those organs on the one hand, as against the attempt to preserve them on the other, while there is not, as is often the case with operations in general surgery, the danger of fatal consequences to be weighed in forming a decision.

There are those in the profession who hold that there is a moral obligation binding upon all men, not to mutilate the human body in the slightest degree beyond what is actually demanded as a "dernier resort," to remove otherwise incurable disease, or in the case of extreme suffering, or the removal of obnoxious deformities. Such men will tell you "it is a sin to extract a tooth. Without taking the extreme position which this class occupy, I will still say that there is more truth in their assumptions than the profession are generally willing to acknowledge. The province of the dentist is essentially that of a "conserver"—a "preserver." He is in duty bound "to keep" and "guard" that portion of the human body which it is his province to treat, as much as for the general surgeon to save to the uttermost that which lies within the province of his art to treat.

Let us then inquire as to the present status of the profession as regards this sort of practice—how we stand as in relation to the past, and what can be forecast regarding the future—touching briefly some of the prominent points in relation to the subject which seem to demand especial consideration.

The time was, and not more than twenty years ago, when the prevailing practice was to extract most aching teeth, except, perhaps the six anterior teeth in either jaw,—or, if such teeth are not extracted, the majority of honest practitioners give little encouragement to the patient for any prolonged usefulness of a tooth, the pulp of which had to be devitalized before filling. Dating perhaps from that time, advancement began to be apparent in the methods of treatment of teeth with exposed pulps, and greater thoroughness in the operations of removing the devitalized pulps and filling of the pulp chamber and canals, brought with it greater encouragement as to this method, until a few years later the thorough and conscientious practitioner could honestly advise his patients to have this operation performed, as promising reasonably of success. This was eminently an advance in "conservative practice," and so marked that I doubt not all of you here present can corroborate the statement, that while, even ten years ago, the usual remark of the patient while coming to us with an aching tooth was: "Doctor, I have an aching tooth, I want you to extract it,—that to day the large majority say instead, "Doctor, I have a bad tooth, I wish you would see if you can do anything to save it." And while two years ago it was very difficult to persuade some patients—and very many, too—to consent to the attempt to save the tooth by devitalization of the pulp, to-day it is sometimes difficult to persuade people to have a tooth extracted, even when there is obviously no other course to be pursued.

This is evidence of remarkable advancement, for when you find the people educated to the point of demanding such operations, you may be sure that the operations have met with favor, through the established evidence of their reasonable success.

Recognizing the demands of this conservative principle, earnest men in the profession, even as long ago as twenty-five years, or thereabouts, turned their attention toward devising some method of treatment of exposed pulps, which should render it possible to fill such teeth, and retain at the same time their vitality. Various methods of capping exposed pulps were pursued, and some with occasional seeming successes, but after years of experiment and experience, the profession came to decide generally that the capping of exposed pulps was not a reliable practice, and it was in the main abandoned, and devitalization and extirpation held almost undisputed possession of the field until the introduction to the notice of the profession of the method of capping with oxy-chloride of zinc. This method has seemed to prove thus far, more successful than any previously tried, and although it has not yet been tested by sufficient length of time to justify us in pronouncing fully upon its merits, it certainly can be said to give great promise for the future, and through its aid we may reasonably hope to arrive at the highest point to be attained in "conservative practice."

These are the most striking features which present themselves in a review on this subject, but there are others almost as important, and in connection with which there are some points which especially demand our consideration.

The introduction of cohesive foil and gold, inaugurated a marked era in dental art, rendering possible the performance of very many operations which otherwise, or with soft foil, could never have been performed. In this way the crowns of teeth can be restored, and the organs rendered almost as serviceable as the natural ones, and the operations can be rendered reasonably permanent, while otherwise many such teeth could not be successfully treated, and would early fall a prey to the forceps, and others could only be treated with partial success by the use of amalgam, that always uncertain material, even if there were no other objections to its general use.

The class of operations here referred to have frequently been derisively termed "*fancy operations.*"

They are fancy operations in just the sense that the "excisions of joints" are fancy operations, as compared with operations of amputation of the entire limb, of which Professor Gross—as before quoted—says, "It is most gratifying to know that it constitutes one of the leading

characteristics of the healing art of the present day." I am glad to be able to say, that the same expression may be used as applied our specialty, for such operations are eminently conservative, and are daily coming to be better understood and more justly appreciated.

The improved methods of manipulating cohesive foil, together with the superior character of instruments of late years introduced, which have come to us as the result of earnest thought and experiment, tested by experience from leading men in the profession, leave no excuse for most men to use any other material than gold for filling in a large majority of cases. And yet, notwithstanding the great advance which it has been affirmed has been made toward true conservative practice, we find to-day, very often in large cities particularly, a class of operators, and first-rate operators as well, who use amalgam to an alarming extent. Men who command first-rate fees too.

You will often hear such men say, "I frequently hear Dr. A. or B. charging forty, fifty or sixty dollars for an operation, but I never could bring my conscience to the point of making such charges." To those acquainted with the operations of such men, the reason is very obvious—they never perform the operations which entitle a man to such a fee. In such cases they invariably use amalgam, when gold could be used to much greater advantage to the patient, and where, did they use the gold they would find that their consciences would not only allow them to charge such fees, but that they could not conscientiously perform the operations for less.

It is just here that I think a large part of the profession fails to appreciate the demands of the conservative principle; neglecting to do their duty by their patients, either through fear to demand a just recompence for their skill and labor, or from disinclinations to make operations demanding so great an outlay of time and nervous force. There are many practitioners who follow this course through ignorance, and sin blindly; but for such there can be no excuse offered, because if they attend the Societies faithfully, take and read all the journals studiously, and inform themselves as fully as they can, it will be made clear to them that such operations as those just referred to can be made with gold successfully, and of a much more lasting character than with any other material, and they should learn to do these things, nor rest satisfied until they can perform successfully the operations which so many around them have long been and are still constantly performing.

I wish particularly to call attention to this point, and not so much that of the younger members of the profession, as of the older—for the latter, as a general rule, the temptation comes with more force to shrink the

responsibility and fatigue of such operations, than to the younger members. The older members generally feel perhaps that their reputations are established, while the younger have theirs still to build up.

Again, the temptation comes to most of us almost daily to extract teeth which we feel assured may be preserved by careful pains-taking treatment.

We dread to undertake operations which we know will be tedious and discouraging, both to the patient and to ourselves; and so many times we try to convince ourselves against our real convictions, that the best we can do for our patients is to advise extraction. This we surely have no right to do, for we are not thus doing our highest duty—if there is anything higher than simple duty—and that duty is to be found in simply living up to the conservative principle.

It may be safely affirmed, as a general rule, that where there is reasonable hope of ultimate success, the attempt should always be made to save a tooth, and it should be restored as fully as possible to its original usefulness. Anything short of this for our aim is not truly conservative.

These are the main points to which I desire to call your attention, but it must not be forgotten that prevention is better than cure, and that the highest expression of conservative practice will be reached only when we can successfully address ourselves to prevention rather than cure.

What I have said imperfectly upon this subject has been with a ew to enunciate a great principle, and is not to be understood as condemning *in toto* certain practices, as for instance, the use of amalgam, which, under certain circumstances is unquestionably invaluable, or with reference to extraction, for clearly that is frequently demanded. But it is affirmed that according to our light our endeavor should always be conservative.

The mistake must not be made in the application of the term conservative, in its sense of being opposed to change or innovation—which is one of its definitions—for conservative practice in surgery or any of its branches depends for its very life upon change and innovation—it is essentially progressive.

The endeavor has been made to place this subject before you in a manner that might be comprehended, and with the hope that the importance of it might be impressed upon your minds. In that hope I shall leave the subject, summing up briefly the definition of conservative de - tistry as the conscientious application of the highest attainments in our science and art, tending always to the conservative—the preservation of the teeth in a safe or entire state, keeping and guarding them from greater loss of structure than is absolutely essential they should suffer in the process of restoring and saving them.

The advance which has been made in this direction during the past ten years, gives us great encouragement to hope for the future, that conservative dentistry will ultimately attain to a near approach to perfection, and rank deservedly among the highest specialties of surgery.

To this end we should not forget that every individual owes it to his profession, himself and the public, to advance by every means in his power, the science and art of his chosen calling, that that day may the sooner arrive when conservative dentistry shall be crowned with the well-deserved praise of carrying healing and beneficiency on its wings.—*Missouri Dental Journal.*

ON THE REPLANTING OF TEETH.

By George T. Barker, D.D.S.

[A paper read before the Southern States Dental Association, Charleston, April, 1871.]

Perhaps no subject at the present time is attracting more attention among the advanced thinkers in dentistry than that which is the subject of this paper: for not only does the theme open up a vast field of study and conjecture how far, and how frequently, such a mode of procedure may be practicable, but it brings us naturally to the study of the pathological changes which arise from such action, and the relation which the replanted tooth bears to the rest of the economy. We are led to study the physiological as well as the pathological changes which take place in that remarkable membrane, the periosteum—a membrane whose agency, recently recognized, as a bone producer, can be said to have remodelled a branch of surgical practice during the last few years, having thus effected the preservation of many limbs that otherwise would have been amputated, and destroyed the usefulness, if not the life, of many a patient. The subject of replanting abstracted teeth is not new in dentistry; in many works of old writers we find a short reference to this subject, a summary of which may be stated as follows: If a wrong tooth has been extracted, or a tooth has been knocked out, it should be washed, the socket cleansed and the tooth replaced. Some believed that union of the separated pulp in the tooth and its former connection took place, because they found no discoloration subsequently ensue.

This view obtains to some extent at the present time, for we occasionally see such assertions in articles in dental journals, though in my judgment the position is erroneous, and cannot be supported by any reliable evidence or probable theory, for reasons which I shall present hereafter. But it is not alone in dental works that reference has been made to this subject, for our magazines have contained from time to time articles where

success is chronicled as the result of replanting extracted teeth. Generally, the authors have resorted to this mode of procedure when teeth have been knocked from their sockets by accident, and I doubt not that all within the hearing of my voice, who have been in practice for a considerable number of years, will remember such attempts in their own experience followed by varying successes. Though these cases have been recorded, the question whether or not teeth should be extracted for the removal of some obscure and otherwise (with our present knowledge) incurable disease, has not as yet received the attention which it deserves, and has only been slightly referred to in brief communications, with which I am familiar. My object, however, at this time, is to direct the attention of gentlemen present to a more advanced step in this direction, and urge upon all to prosecute experiments in this particular field, viz: the extraction and replanting of teeth as a means of arresting incurable dental diseases. I will detail, as an example, the following case, which has received treatment at my hands:

Miss H——, aged seventeen years, of a sanguo-bilious temperament, and decidedly healthy organization, presented herself for treatment for alternate face and toothache, in July, 1870. She was at that time residing at Long Branch, N. J., a popular sea-side resort on the Atlantic coast, and as I had made a careful examination of her teeth but a few weeks previously, which, with another unsuccessful search at that time for exposed pulps or dental irritation, led me to fly to that frequent statement of the bewildered physician and dentist, viz: that she was probably suffering from neuralgia, and had better see her physician and obtain some appropriate remedy. This request was complied with, but without relief being obtained from a pain which partook of the nature of tic dolourcux, but which seemed to be most severe in the lower teeth of the right side. In a week she again presented herself, having suffered greatly. On making at this time a careful examination of her lower teeth, I found slight dental irritation at the root of the right second lower molar. This tooth had a small gold filling upon its grinding surface, and injections alternately of hot and cold water demonstrated the presence of an irritated pulp. My first step in the treatment was to remove the filling, and, if possible, expose the pulp. This I could not succeed in doing, as the attempt gave so much pain. Failing in this, the cavity was filled with a pledget of cotton saturated with carbolic acid, and covered with Hill's stopping to prevent irritation from thermal changes. The carbolic acid was used with the object of inducing union between some of the elements of the tooth bone, as it is believed that, under favorable circumstances, carbolic acid will unite with albumen,

forming the carbolate of albumen, an insoluble substance which will protect parts from irritation, and which is hence used for the treatment of sensitive dentine. Finally, blood was freely drawn from the gum over the affected root, and after the bleeding had subsided, the gum structure in the neighborhood was painted with the following preparation, which I have used in numerous instances with most favorable results:—

℞.—Tr. iodinii, fl. ʒ iv;
Etheris, fl. ℥ i.—*Misce.*

The object of taking blood from the neighboring parts was to relieve the distended vessels of their accumulated contents; that of applying the ethereal preparation of iodine was to favor absorption of any effusion, the product of inflammatory action, a result which is more frequently obtained with this substance than with any other with which I am familiar, though care is necessary in its use not to allow the cheek or lips to touch the gum until the ether has evaporated, leaving the pellicle of iodine intact, or blistering of the parts will occur.

The treatment, however, was entirely unsuccessful, as the pain continued as bad as before, particularly at night. After a few days, the carbolic acid and gutta percha filling were removed, and the ordinary arsenical paste introduced, for while it is a principle that the paste should not be introduced until the inflammation has subsided in a pulp, as absorption will not readily take place in inflamed parts, yet occasionally the application will excite so much irritation that the pulp will die from over-stimulation. In this case there was a thick covering of bone protecting the pulp from the arsenious paste, and absorption would have to take place through this plate before the pulp could be influenced. The introduction of the paste only addedto the pain, and though retained for some forty-eight hours, did not in any way diminish the sensitiveness of the pulp. The carbolic acid and Hill's stopping were again introduced, only to be followed by the same result as above stated. At this time the young lady had become so much worn down from loss of sleep that resort was had to the syrup of the hydrate of chloral as an anodyne, the following prescription being used:—

℞.—Chlorali hydratis, ʒ ss;
Aquæ distil., fl. ℥ iv;
Syr. aurant.,
Mucil, acaciæ, ăă. ℥ ss.—*Misce.*

A tablespoonful was given at night. And I would here state that though used very frequently for six months by this young lady, it was not found necessary to increase the dose, as a tablespoonful at night would cause a good night's rest to ensue, while no headaches or other

unpleasant result were present the succeeding day. It is too much to claim that the continued use of this anodyne would present the same peculiar advantage in all cases, as we must ordinarily expect to resort to an increase in quantity and frequency of doses, the longer any sedative is used.

The pulp paste was again introduced, was retained for forty-eight hours, though she suffered excruciating pain, but was finally removed, the pulse still being as sensitive as ever. Resort was now had to an anæsthetic; the young lady was placed fully under the influence of chloroform, (as her friends preferred that anæsthetic, though my own preference is always for ether,) the pulp cavity was drilled into, and the living pulp wholly removed. Of course, my belief was, that the trouble would now end. The pulp chamber was left open; the gums thoroughly painted with officinal tincture of capiscum, and the patient dismissed with the assurance that all pain would in a short time cease. The next day the tooth was as painful as ever, the inflammation of the periosteal membrane as great as before, the tooth was elongated, and there was no improvement whatever over the former condition.

The following treatment was then resorted to: one-sixth of a grain of morphia was injected hypodermically over the root. This was followed by temporary relief only. Five drops of tincture of aconite root were then placed on cotton, and laid over the affected root; partial relief followed. The tooth was not constantly painful, but shooting pains would occur frequently during the day; no sleep could be obtained at night without using the syrup of hydrate of chloral, as the pain was generally constant at that time. In this way the tooth continued for a space of nearly six months, every effort being made on my part to reduce inflammatory action, and to have it terminate in resolution, and every agent with which I am familiar, that could possibly be used, was tried, unsuccessfully. An effort was then made about the first of the present year to obtain a termination of the inflammation by suppuration, in the hope that an abscess would be formed, which could be more successfully treated. Heat to the face on the affected side was tried, frequent use of hot water in the mouth, hot fomentations and cataplasms, all of no avail; it would not terminate in suppuration, but would simply ache! ache! In the whole of this time the young lady had never once asked to have the tooth extracted, but had borne the pain with a heroism truly wonderful, and which, in consideration of my numerous failures, entitled her to be considered the most courageous person with whom I had ever met in my professional experience. The determination was now made in my mind to extract the tooth, and, if practicable, replace it. Accordingly, chloroform was administered; the tooth was extracted; the end of the root (fortunately this second molar had the roots joined) was cut off, and the tooth was instantly placed in a solution of tepid water, fl. ʒ ss, carbolic acid, gtt.

v. The socket was wiped with the solution, and the blood carefully removed. A broach was introduced into the pulp cavity, which was found to be entirely free, and the tooth was carried into its former socket, the shape of which favoured its retention. The cavity through the tooth was left open, and the patient was dismissed. No after treatment except an astringent wash has been made use of, and no pain of any consequence has been felt up to this time. The articulation is perfect; the tooth is as firm as other molars in her mouth, and it is closed with a good temporary filling, which I shall in a short time replace with a permanent one of gold; and, much to my own and the young lady's gratification, her courage bids fair to meet with what, in her estimation, is a fair compensation for her sufferings. The part of the root removed (which is shown) presented these characteristics—the periosteum was greatly inflamed, but, just outside the apicial foramen, there was a small mass of apparent pulp tissue, having somewhat the appearance of an abscess, only smaller, and apparently solid in structure. This mass was placed beneath the field of a microscope, and was found to consist of a true pulp tissue, containing multitudes of calcareous granules. Here, then, was the secret of all my trouble; instead of a calcified pulp, as shown in these specimens, or nodules in the pulp, which many doubtless have seen, there was developed or deposited granular matter, which, so long as present, excited intense inflammation, first in the tooth pulp and periosteum, and lastly in the periosteum and tooth socket. The object in cutting of the root was to allow a place for the accumulation of the effusion which would certainly be poured out, as the result of the extraction, and which, accumulating, would tend to protrude the tooth from its socket, and interfere with articulation—a result which generally follows when teeth are replaced and this action is neglected, causing the tooth sooner or later to drop from its socket, or be a constant source of annoyance to the patient. My belief is, that the remaining periosteum on the root of the tooth is at this time living; that that membrane does not undergo molecular death so readily as other structures, and that under favorable circumstances vitality will remain. I have proved this position beyond the shadow of a doubt, in cases where teeth have been returned to their socket, and have subsequently been extracted, living periosteum being found upon them. That a separated pulp can unite to its former connection does not admit of a probability, for the retraction and contraction of the divided vessels would prevent such a result from being accomplished were union by adhesion possible; therefore, when a tooth is inserted, with the pulp remaining, there is every probability that alveolar abscess will occur, and the absence of discoloration is only an evidence that the absorbents have carried off the effete materials, the result of a disintegration of the pulp.

As a fitting close to this paper may we not assume that the transplanting of teeth opens to us a method of successfully treating some obscure dental diseases, and of combating intractable alveolar abscess, partial necrosis, exostosis, and perhaps other dental affections. It seems to me the answer must be in the affirmative.*—*Times.*

* Since the above paper was read, the corresponding molar on the left side, though comparatively sound, was likewise affected, and it, too, was extracted and replaced with the same success as above mentioned.

EDITORIAL.

SOLICITING PATIENTS.

It is a generally accepted maxim with all respectable physicians and dentists, that any advertisement, card, &c., which draws attention to special methods of practice or special reductions of price, whether fair or fraudulent, are unprofessional. Some time ago we discussed this subject pretty thoroughly in this journal, and Seneca's excuse for reiteration, that "a thing is never too often repeated which is never sufficiently learned," will justify us in again adverting to it.

Any ordinary advertisement, such as the simple name, profession and address, is no doubt a solicitation, but most of first class practitioners who even use this form, would, in most instances, prefer not to advertise at all, but may feel obliged to do so in self-defence. With this simple form, however, no one can fairly find fault, though some do.

But when these cards are carried around in one's pockets for miscellaneous distribution, and the individual is seen poking them into cars and conspicuous window panes; when friends are button-holed in the streets and several pushed into their pockets, and introductions are followed by the irrepresible presentation of a card and the orthodox remark "Any influence you can exert in my favour will oblige, &c;" when dentists "chum" with hotel-keepers and are fixtures of hotel doors and bar rooms, seeking notoriety and acquaintances in circles whose respectability is generally impugned; when packages of their cards are left in saloons and in the glass cases of shops, and the individual is everlastingly on the *qui vive* to obtain patients in every other way except through the channel of merit and modesty, then we have a kind of solicitation debasing to any gentlemen, and injurious to the name and fame of the profession. Against the whole low trickery—for it is nothing less—of show cases, golden tooths, extravagant multiplicity of sign boards, special advertisements, miscellaneous obtrusion of cards, hand bills and posters, let those who respect the profession frown; for such attractions we know, instead of being an indication of that similar advertising enterprise which in other businesses may be backed by real capital and worth, is almost invariably a sign of lack of ability in dentists who resort to their use. Let respectable practitioners educate the public in these points, and quackery will die of starvation, but so long as the people are left in ignorance, so long will flourish the race of dental charlatans and victimized fools.

If we expect to elevate and advance our profession in Canada we must individually examine our position in regard to these and other points of

ethics, and modify and remove objectionable associations, whose quackery is not one whit excusable because they have antiquity or example for their apology. When show cases and such traps are removed, when dental advertisements and dental door plates leave no impress of assumed superiority, when the expositor who calmly sat down and in one breath defamed the entire profession the better to extol himself—silly ass!—is defunct or repentant, when they who sin against the honor of the profession resolve to abstain, when we are satisfied to call ourselves Surgeon Dentists without an array of less common and more high-sounding appellations, when in fact, men aim to win position by merit, and enterprising zeal in their profession, then we may look for a Golden Age in Dentistry, and a Golden Age not so difficult to be brought about as at first we would conceive. Quackery has flourished in all professions and countries on the silence of its victims and the *ennui* of its foes, and if impostors who exist do not repent, then expose them vigorously and constantly before the public. The present state of affairs in Ontario and Quebec should effectually check any new additions to their ranks, if the Boards of Examiners are faithful.

We have digressed a little from the subject proper of these desultory remarks, but in fact, all these questions of ethics run into one groove, and we shall persistently persecute these tricks of quackery until their promoters swear "total abstinence," and the profession is purified of their contamination. "Whose head the cap fits may wear it."

B.

LYCOPERDON, OR PUFF BALL.

We ask our readers to give more than a passing notice to the article on "Lycoperdon, or Puff Ball," in the present number. We know from experience of its success in arresting alveolar hæmorrhage where the actual cautery, perchloride of iron, and all other means failed. Only one case (in the *Medical Gazette* of 1842) is cited where it seemed to fail. About a month ago, I used it in a dangerous case, which had resisted all other treatment, and it instantly arrested the hæmorrhage. It is the simplest and speediest styptic to be had, and ought to be not only in the office of every dentist, but in the hands of every physician and druggist.

Drs. B. W. Richardson and Snow made themselves insensible by its fumes, and the former narcotized over a thousand animals with its vapor, and operated successfully; the effect lasting, in many cases, for half an hour. Dr. Richardson frequently inhaled the fumes through a hookah pipe, letting them pass first through potash water to clear them

of carbonic acid. He recommended a slight inhalation from a common pipe, as a local anæsthetic or temporary relief, to those suffering from the pair of an exposed pulp.

Those who have not used it ought to have it on hand. Large quantities are found down about Murray Bay, and throughout the Eastern Townships of the Province of Quebec, and, indeed, in the vicinity of most dry and sandy soils.

B.

THANKS.

We are indebted to Dr. McQuillen for the cut on page 271.

MEETINGS OF THE ONTARIO BOARD AND SOCIETY.

We will devote the next number to a complete report of the meetings of the Ontario Board and Society, with the essays of Dr. Wood on "The Advancement of Dental Science," and Dr. Rowe on "Remarks on Filling Teeth," &c.

TO SECRETARIES OF DENTAL SOCIETIES IN THE UNITED STATES.

We are preparing a revised list of dentists on this continent, and would esteem it a personal favor if secretaries of dental societies throughout the United States would send us as complete a list of dentists in their state as they can find, whether members or not. We would be happy to pay the expense of transcription; or send the journal *gratis* to any one who will send us lists.

CANADIAN DENTAL RUBBER.—Arrangements have been made in Canada for the extensive manufacture of a superior vulcanite, made from the purest Para rubber, and with the very finest machinery. It will cost less than any imported, while it is known that it will be equal to any in the market, and superior to several. It will be in the market next month.

A PLEASURE TRIP TO QUEBEC.—THE LATEST.

We give the following gratuitous insertion. Its originality is refreshing this warm weather:—MONTREAL A QUEBEC—VOYAGE DE PLAISIR A QUEBEC.—Ce Billet donne droit au Porteur d'aller au No. 192 Rue Notre Dame, avant et après ce Voyage, pour se faire poser, orifier, plomber, émailler et extraire les Dents à des prix qui conviennent a toutes les classes de la sociéte. A L'enseigne de la Grosse dent d'or. Vis à vis Devins & Bolton. Même Batisse que J. Léveille, photographe.

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ORIGINAL COMMUNICATIONS

ON THE ADVANCEMENT OF DENTAL SCIENCE.

Read before the Ontario Dental Society. By H. T. Wood, L.D.S., Cobourg.

The subject to which I wish to call your attention, for a few moments, is the Advancement of Dental Science. And, in the beginning, I desire to acknowledge my inability, on the present occasion, to do anything like justice to a subject so interesting and extensive. I can only briefly glance at a few of the more important eras that mark the development of Dental Science. A very slight acquaintance of the subject will satisfy any one that we, as a profession, have made very great progress.

Our art is a very ancient one; Herodotus, the oldest Greek historian, informs us that dentistry was practised, long before his time, among the Egyptians, of whom he says, "That the cure of the *teeth* was assigned to certain members of the healing art." In confirmation of this, we hear, at the present day, of Egyptian mummies, whose teeth are filled with gold.

From the time of Herodotus to the sixteenth century, dentistry is almost lost sight of. About the year 1574 it commanded some attention; during the ensuing twenty years we find some six persons writing on the subject; in the following hundred years we find forty-three; and from the eighteenth to the nineteenth century we find one hundred and ten. From 1800 to 1843, a little less than half a century, including medical journals writing on dental subjects, we find one hundred and fifty two authors.

About the close of the eighteenth century dentistry was introduced into America, by the surgeons who accompanied the French armies to the United States, and also by special practitioners. From the close of the Revolutionary War in 1782 to the year 1830, dentistry made rather slow progress; from three to five could perform all the operations required

in such cities as New York, Philadelphia and Boston, while the West and South were supplied by itinerants.

In 1825 there were not more than one hundred dentists in the United States; in 1865 there were probably more than six thousand in practice. They had at that time twenty-six Dental Societies At present they publish six Dental Journals, and have in successful operation nine Dental Colleges.

These institutions are doing a great amount of good, not only to the people of the United States but also to the people of Canada. In regard to the progress of dental science we are not much behind our neighbors. As near as I can ascertain there were not more than six dentists in this province thirty-five years ago, and they travelled about from place to place. Our worthy president, Dr. Relyea, is perhaps, one of the oldest practitioners among us. His advent into this Province was in 1841, thirty years ago. Dr. Kahn of Stratford, Dr. Stone of London, and Dr. Wells of Simcoe, have also been in practice from twenty-five to thirty years; I might also mention others who have been in practice from fifteen to twenty-five years, but time forbids.

For some time dentistry was something of a secret art; secret among individual members, each one trying to *obtain* all the information he could and *give* as little as possible in return.

About the year 1860 some of our leading brothers made efforts to form associations, but for want of united action each effort proved a failure, until Dr. Day, of Kingston, issued circulars calling a meeting of the dentists of this Province, to be held in the city of Toronto, on the 3rd day of January, 1867, and, strange to say, only the following gentlemen responded to the call in person: Dr. Day, Messrs. C. S. Chittenden, F. G. Callender, J. O'Donnell, H. T. Wood, A. D. Lalonde, M. E. Snider, D. A. Bogart and J. S. Scott, nine all told. Rather discouraging for those who had travelled from 150 to 200 miles; but we had men of the right metal, each was determined to do his duty.

The first business of that little meeting was to organize an association; after the election of officers, in which Dr. Day was elected president, &c., a committee was appointed to draft a bill of incorporation, to be submitted to Parliament at its next session.

The association then adjourned to meet in Cobourg on the second Tuesday of July following.

The meeting in Cobourg was more encouraging, the members having increased from nine to thirty-three in six months. After a very harmonious and profitable session, during which the bill of incorporation was adopted, the association again adjourned to meet in Toronto on the

second Wednesday of January, 1868. The association assembled in the St. Lawrence Hall on the 21st January, 1868; from sixty to seventy members were present. This meeting was of very great importance. Parliament being in session, the members of the association went in a body to the Parliament buildings, and while there Dr. Boulton, M.P.P., introduced the Act respecting Dentistry. The medical profession gave us every encouragement, Professor Berryman and Dr. Dewar, both members of the Medical Council for Ontario, Dr. Boulton, M.P.P., A. M. Roseberg, M.D., and B. T. Whitney, M.D., Buffalo, N.Y., were in attendance, instructing and encouraging the profession with their very able addresses.

The Bill was passed by Parliament after some alterations, and received the assent of the Lieutenant Governor on the 4th March, 1868.

"Let there be light" is just as appropriate to-day in our profession as it was in the beginning. Why go groping about in a slip-shod manner? when we can not only become fellows but even masters of our noble profession. The light of day is just beginning to dawn. The seed sown by the association is beginning to take root.

Local societies are formed, papers on practical subjects are read, clinics are performed, and all our societies are giving and receiving instruction; completely upsetting the trade of the tooth-carpenter and establishing in its place, in an incredible short space of time, a system of dental surgery of no mean repute. One of the results of this advancement is, that teeth are saved to-day, quite satisfactory to all concerned, that would, a short time ago, have fallen victims to the death-grip of the forceps.

What a change from the narrow, contracted views that at one time characterized the profession, to the noble principle of doing good not only to each other, but to the whole community.

In speaking of advancement I ought not to pass in silence over the introduction of the mallet. Dr. Atkinson, of New York, deserves great credit for the solution of this great problem; by it, the practice of tooth-filling has been completely revolutionized. I can call to mind but very few gold-fillings of my own, or of other practitioners, that I now consider good. In fact, I have about come to the conclusion that I never filled a tooth well until I used the mallet in some form.

Dental literature is a great instrument of advancement and instruction in dentistry. All the members of the profession, in the Dominion of Canada, ought to take the *Canada Journal of Dental Science*, and as many other good journals of the same kind as they can afford.

If we desire to continue to advance in the future as we have done in the past, we must liberally support our own journals and our own col-

leges. In my opinion we will not be able to take that position among the professions of our country, to which we are entitled, until we have successfully established a Dental College; and I hope the time is not far distant when we shall see one in this city equal to any similar college on the continent. If we do not accomplish this, then we are not true to our trust.

The whole number of licenses granted by the Board of Ontario is one hundred and sixty-six. The persons entitled to their licenses without examination have nearly all received them. The applicants in the future will be chiefly from the ranks of the students.

From the superior advantages now within their reach, and the provisions that I trust will soon be made for their instruction, some of the brightest ornaments of our profession will be found among them.

The "Act respecting Dentistry" has done more to raise the standard of our profession in the eyes of the community than anything we could possibly have done. The people appreciate good operations. They regard the circumstance of a man's being without a license from the Board as a good proof that he is not properly qualified to practice.

The Board is determined that the people shall have no reason to complain of incompetent dentists. As has been done in the past, the standard of examination will be continually raised in the future, so that our licentiates shall occupy a position second to none in the world.

SOME REMARKS ON FILLING TEETH.

Read before the Ontario Dental Society. By Thomas Rowe, M.D., D.D.S., Cobourg.

Upon one point Dental Surgeons are agreed, and that is, that a good gold filling is superior to a filling of any other material.

And I think we are still further agreed on another point, which is, that conditions frequently render it very difficult, if not impossible, to make a good gold filling, such as is necessary to preserve the balance of the tooth as well as restore its lost parts; because all fillings are imperfect which are not impermeable to moisture, leave dentine exposed to air and the fluids of the mouth, or do not restore the contour of the tooth.

Now, let us consider some of the difficulties with which we have to contend. I will take them up in the order presented in practice. In the first place dental surgeons, as a rule in this province, are compelled to earn their bread by the sweat of their brow, which condition has induced the habit of reckoning all outlays in comparison with the incomes, proving at all times a bar to progress. Unfortunately we live

among a class of patients whose love of luxuries predominate, spending as they do, yearly, hundreds of dollars on superfluous clothing, whiskey, tobacco, and other ways perhaps more disreputable; yet feeling that every cent spent upon their teeth is entirely thrown away. Perhaps, gentlemen, you think I have drawn a dark picture; and dark it is, indeed, when we consider that the dental profession is almost entirely responsible for it.

Perhaps you will ask how are they responsible for it? When I beg leave to ask how many good dentists are there among us and what per centage of good operations come under our observation; what proportion of first-class operations do we individually make; or, to put the question in a plainer form, I will ask is there a dental surgeon present who is perfectly satisfied with ten per cent. of his own operations? I think I can safely answer that question, by stating that there are but few among us who make five per cent. of their operations nice enough to stand their own criticism. If this be so with the best, what can be expected of the mass, and how can we expect the people to have confidence in the abilities of dental surgeons? and in making this statement I refer to perfect operations, fillings which will preserve the balance of tooth substance and restore contour, with all natural convexities and concavities. If all this be true, there has been already a formidable array of obstacles presented, and to those are added the cost of gold, sensitive dentine preventing proper preparation of the cavity, and mental and physical inability to bear the operation extending over three or four hours. The saliva too frequently proves decidedly troublesome, a very small amount of moisture being sufficient to destroy the integrity of the filling.

Many patients are decidedly hard to manage, seeming inclined to give all the trouble possible, and finally indicating that they, and not the operator, should receive the fee for the operation.

Now it is well known that either of the above obstacles are frequently very troublesome to contend with. But when we are forced to combat them all combined, as we frequently are, the making of a good gold filling is rendered impossible. Therefore it becoms evident if we are to attempt to save certain teeth in certain cases, we must resort to a material less costly and more readily introduced. But now we find ourselves in difficulty, because the large number of inferior materials in use indicate to us at once that we are not possessed of any one material suitable for all cases. Some of them are too soft, they will not resist the force and wear of mastication; others dissolve in the fluids of the mouth; while a dark color is decidedly objectionable for a filling in a front tooth. As belonging to, or representatives of, the three classes, I will name the

different preparations having gutta percha as a base, among those being too soft, consequently unfit for permanent fillings, although well adapted for temporary fillings in many cases. The different preparations of zinc answer well for temporary fillings, but wear, and the fluids of the mouth in most cases render them unfit for durable operations. Consequently, we are compelled to resort to that much abused material called amalgam, being the only one capable of withstanding all the combined forces. But its color is decidedly objectionable, especially for front teeth.

But I will hazard the statement that, when well prepared and thoroughly packed into a properly shaped cavity and decently finished, it is infinitely superior to a poor gold filling. And the amalgam I mean is no miserable contraband material composed of quicksilver and filings of coin silver, which any dentist, in these enlightened days, should be ashamed to use, but a composition of silver, tin and quicksilver, which is improved by the addition of platinum.

There has been a great deal said about salivation, or ptyalism, having been produced by amalgam fillings, the truth of which I very much doubt; nevertheless, if it has happened occasionally, the material must have been very indifferently prepared. And if, in its preparation, you follow my directions carefully, I shall hold myself responsible for all injury done in the way of salivation.

In the first place, the cavity must be as well prepared as for a gold filling, by carefully removing all softened tooth substance, trimming down thin edges, and securing good undercuts or retaining points. After which, the cavity should be filled with a pledget of cotton, saturated with creasote or carbolic acid, until the amalgam is prepared.

Perhaps you do not understand why the creosote is applied.

It is for this reason, that by removing all the moisture possible, there will still remain enough to more or less oxydize the filling as well as have a tendency to soften the dentine; but placing the creasote in the previously dried cavity saturates the abrupt ends of the dentinal tubules, or so far dilutes the remaining moisture that it is rendered inert; and I presume you are all well aware that it is impossible for a body saturated with creasote or carbolic acid to decay.

The cavity being ready, the amalgam should be prepared by placing a globule of quicksilver in a mortar, or in the hand, (and I prefer the hand, first, because it is more convenient, and secondly, because I believe its warmth assists in the cleansing process,) adding sufficient filings to make a mass that will fill the cavity. After thoroughly incorporating the filings and quicksilver, wash in alcohol repeatedly, until there is no more discoloration; after which, place in a chamois skin and wring with

pliers, not as dry as you can, because there will not be sufficient quicksilver remaining to thoroughly organize the filling, but it should be so dry that packing will not bring free quicksilver to the surface of the filling.

After the material is prepared, the next step should be to protect the cavity and filling from moisture as completely as in gold filling, then dry out thoroughly, and with a blunt plugger or bur head drill tapped with the mallet, carefully introduce small portions of amalgam into all undercuts and retaining points, adding piece after piece, until the entire restoration is made; after which, all ragged edges and surfaces should be nicely smoothed, and the patient requested to call next day to have the work finished.

The amalgam, at the end of twenty-four hours being well set, take your burnishers, and with gentle taps of the mallet thoroughly condense the entire surface; be as careful as in gold filling to burnish nicely at the junction of the filling with the tooth, then, with sand paper and polishing powder, finish nicely, and my word for it, you will have a serviceable piece of work.

A CURIOUS CASE.

By H. G. Weagant, L.D.S., Morrisburg.

A young man, apparently about nineteen years of age, came into my office to have a tooth extracted, at the same time saying that he was in a great hurry and wished to catch the train, which was due in a few minutes. I hastily examined his mouth, and found the gums very much swollen, and a large abscess formed above the tooth. The tooth, and in fact, all the other teeth, of which he had a complete set, appeared to be perfectly sound and healthy, regular and all but the end of the fang well developed. I proposed lancing the swelling to let it discharge; but this he would not allow, saying he had not time to wait and did not care to save the tooth, as it had already given him enough pain and trouble. I extracted it easily with the forceps, and at once saw that it was deformed. For obvious reasons I let it drop in the spittoon, and as it fell I noticed something, which I at first took for dead pulp, detach itself from the tooth and adhere to the side of the spitoon. I picked it up and laid it upon the table. I thought it looked like a soft undeveloped molar tooth; but before I could examine it more closely, the patient caught it up, tore it to pieces and tossed it away. About a wine-glass full of thick yellow matter followed the extraction of the tooth. Upon examining the tooth I found no signs of the pulp remaining.

[The above cut is a fair illustration of the case. Ed. C.J. D.S.]

HOW TO REPAIR RUBBER PLATES.

By G. V. N. Relyea, L.D.S., Belleville.

Put your plates in plaster as usual. Instead of perforating the old rubber, coat it with a solution of rubber dissolved in chloroform ; then put on your new rubber, and the old and new will as thoroughly unite as if all new. On examination it will be found to be perfectly incorporated. Try it.

JOTTINGS.

By S. Woolverton, L.D.S., Grimsby.

For the information of some of your readers, who may not be aware of the fact, I would state that I have found a very great advantage gained, as far as controlling pain is concerned, by adding to my carbolic acid or iodine a few drops of oil of peppermint. I found immediate relief from it in my own case, when I was afflicted with alveolar abscess of the worst form. It combines with the iodine and creosote and makes a beautiful sea-green color, which does not stain the hands. It is said that this oil has been used by the Chinese for a long time as a remedy for neuralgia.

I should like to enquire through the *Journal* whether those who are using Pack's gold have not found that there is less difficulty completing a filling, that has by accident become damp, than with other foils that they have been in the habit of using ; and, if so, will give some reason why its adhesiveness is so much better retained under moisture than that of the other manufacturers.

On my return to the country after the closing of the dental school in Toronto, my friends were anxious to know whether I was a fully-fledged dentist yet. I told them no ; that I did not expect the title of L.D.S. until after the next examination. One of them enquired what L.D.S. stood for. I explained the meaning to him. "Oh," he said, "I thought they stood for pounds, shillings and pence." Not so bad, thought I, and I only hope that my friends, when I come to practise, will take them in the same light.

GOLD PLATING ON SILVER BASE FOR ARTIFICIAL DENTURES.

By T. W. Raines, L.D.S., Almonte.

Finish a silver plate in the usual manner; remove all stains from soldering; fit the plate in the mouth ; if all right, proceed.

1st. Coat all the metal with quicksilver. Plate solder and clasps.

2nd Cut No. 20 gold foil in strips, use strip after strip until you have the plate covered; rub with a piece of chamois until the gold all disappears; add another layer of gold and rub as before.

You can put the gold on to any desired thickness.

3rd. Expose to a gradual heat until all the quicksilver is evaporated; polish, and you will have a rich gold surface.

"SOMETHING IN A NAME."

By H. G. Kenneth, L.D.S.

Though I do not pretend myself to have been free from blame in the matter of the proper use of names and terms in dentistry, I have appropriated any lesson on ethics I could obtain, and am anxiously desirous of assisting in raising our *profession* by every direct and indirect means in my power. There is a great deal in a name, and I, for one, do not believe that a rose would smell as sweet if called a thistle. Our patients judge us and respect us from the way we respect ourselves, and they also estimate dentistry just as we educate them. I must confess to having had my ideas and practices entirely changed by the advent of dental progress. I used a show case and advertised loudly. To-day I do neither, and would be ashamed to see my name appended to advertisements I used five years ago. Now if we care to improve in the use of correct language, with reference to our daily walk and conversation, surely we should have an equal anxiety to be correct in using names and terms in connection with our profession. Some years ago a lady from Chicago called at my office with another from a city of Ontario. The latter said: "What will be your *price* for filling." The Chicago friend gave her a nudge, and said: "Don't say 'price,' Mary, say '*fee*.'" I date my own use of the proper term from that moment. The following is transcribed from an article on the subject I read some years ago:

Profession,	not Trade.
Fees,	not Prices.
Practitioner, Operator, Dentist,	not Workman.
Patients,	not Customers.
Instruments,	in the Surgery.
Tools,	in the Laboratory.
Operation, or Specimen of Work,	not Job.
Student,	not Apprentice.
Assistant,	not Journeyman.
Laboratory,	not Workshop.

Let us all learn these by heart, and teach our patients by our conversation, the proper use of proper terms in dentistry.

A CHEAP QUACK DENTIST.

BY X. Y. Z.

I recently came across a pretty fair specimen of our Canadian quack and cheap dentist. He was busy taking the teeth off filthy old sets which had been worn for several years, and to the question, as to what he purposed doing with them, he replied with an air of ingenuity and smartness, "Why, use them for new cases of course. You see many persons, for whom I put in partial sets, return in a few years to get full sets, and then I get back their old pieces. Sometimes they do to work up for their permanent sets, if not, they do for some body else."

I wish his patients much joy of their work. Pleasant thought, is'nt it, to think that one has in his mouth old grinders formerly worn by another whose habits and health were not marvels of purity? I am afraid that the above party seriously considered my suggestion to go into the resurrectioning line.

PROCEEDINGS OF DENTAL SOCIETIES.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

By J. B. Willmott, D.D.S., Secretary, Toronto.

The Board of Examiners of this College held their semi-annual meeting in the Rossin House, Toronto, on the 18th and 19th of July.

There were present of the Board H. I. Wood, President; A. C. Stone, M.D., Treasurer; John Bowes, Registrar; J. B. Willmott, D.D.S., Secretary; Thomas Rowe, MD., D.DS.; B. W. Day, M.D.; H. H. Nelles, D.D.S.; John Leggo, Lyman Wells, John Elliott, and G. V. N. Relyea.

The only business of importance before the Board was the consideration of applications for license. John Best, of Fingal, Ont., having furnished satisfactory evidence of having complied with the conditions of the Act, was granted a license on time. The following, after passing a pretty rigid examination in a highly creditable manner, were allowed a license to practise, and the degree of Licentiate of Dental Surgery. S. Zimmerman, D.D.S., of Nelson; W. Hulburt, of Pembroke; S. Wolverton, of Grimsby; and T. W. Clark, of Kingston.

"The Act respecting Dentistry," passed by the Legislature of Ontario, in 1868, though in several points defective, has already brought forth much fruit in the elevation of the profession. This is every year more clearly visible, as each succeeding class of students presenting them-

selves before the Examiners, are found prepared to pass satisfactorily the more severe ordeal required of them.

Some better provision than that now made by the Act is necessary in order that a dental college may be established on a firm basis in Toronto.

An application will be made at the next sitting of Parliament for an amendment to cover this deficiency.

We have no doubt but that the Ontario Legislature will readily grant any enactment which will have the effect of elevating the standard of the Dental profession.

ONTARIO DENTAL SOCIETY.

By J. Woods, L.D.S., Secretary, Toronto.

The third annual meeting of this association was held in the Rossin House, Toronto, commencing on Thursday, the 20th instant, at 2 p.m. The President, Mr. G. V. N. Relyea, occupied the chair, and in the absence of Mr. W. H. Branscombe, Dr. J. B. Willmott discharged the duties of Secretary *pro tem.* The attendance was very good, the number present being about forty.

The following new members were proposed and elected:—Messrs. H. Robinson, Schomberg; F. M. Clark, Kingston; S. Zimmerman, Galt; J. Woods, Toronto; T. Raines, Almonte; J. Zimmerman, Zimmerman; T. Frank, Orangeville; and H. G. Wegeant, Morrisburg. The retiring President, Relyea, then read his annual address, after which the meeting proceeded to elect the officers of the society for ensuing year. The following were chosen by acclamation:—President, Mr. D. Pentland, Peterborough; Vice-President, Mr. S. T. Clements, Napanee; Secretary, Mr. J. Woods, Toronto; Treasurer, Mr. J. Bowes, Hamilton. After reading a very interesting paper on the advancement of Dental Science, by Mr. H. T. Wood, the meeting went into committee of the whole for the purpose of considering the proposed amendment to the Act respecting dentistry. Mr. J. W. Elliot in the chair. The preamble and first two sections of the Bill were adopted without much debate, and at 5.30 p.m., the committee rose and asked leave to sit again in the evening.

After arranging for the performing of clinics on the following morning by Messrs. Callender, Toronto, and Chittenden, Hamilton, the meeting adjourned till 7.30 p.m.

EVENING SESSION.

The President, Mr. Pentland, in the chair.

The meeting resumed the consideration of the proposed amendment, in committee.

At 8.30 the committee rose, and the Bill was referred to a select committee, consisting of Dr. Willmott, Messrs. Callender, H. T. Wood and Leggo, for revision.

The committee having retired, the members spent some time in examining specimens of dental instruments, improved Pyroyline, Canada rubber, &c., exhibited by Mr. W. G. Beers, and several interesting preparations presented to the museum by Mr. Relyea and others.

The meeting was then called to order, and a discussion on the use of rubber dam in filling took place, Mr. Relyea explaining his mode of using it at considerable length.

After an absence of about three-quarters of an hour the committee of revision entered and reported a draft of the Bill as adopted in committee, and the meeting again went into committee of the whole for its further consideration. At 9.45 the committee rose, and the Bill was referred back to the select committee to add another clause amending the 14th section of the existing Act, and providing for the holding of one session of the Board only in each year. In the meantime the meeting returned to the discussion on the rubber dam, Drs. Day, Chittenden and others taking part. At 10.15 the select committee returned and reported the Bill as amended, and on motion of Mr. C. S. Chittenden, seconded by Mr. H. T. Wood, it was adopted.

Dr. Willmott and Mr. Leggo were then appointed a committee to draft petitions to the Legislature and the Lieutenant-Governor in Council, praying for such legislation on the subject as would meet the wants of the profession as embodied in the draft of the Bill just adopted. Mr. C. S. Chittenden brought to the notice of the meeting the conduct of Mr. S. J. Sovereign, of Hamilton, one of the members of the society, which he represented as grossly unprofessional, and meriting the severest condemnation of the association. Dr. Relyea explained that the Board of Directors and Examiners had already taken action in the matter. It was then laid over until the following day and, on motion, the meeting adjourned at 10 30 p.m.

Friday, July 21.

The forenoon was spent in witnessing two very interesting operations performed by Messrs. Callender and Chittenden. The former was the restoration of a large portion of a right sup. central incisor, which had been broken off, and the latter the filling of a posterior approximal cavity in the first right sup. molar, illustrating the use of the rubber dam. Both of these operations received the greatest attention, and richly merited the high commendations bestowed on them by those present.

AFTERNOON SESSION.

The President called the meeting to order at 2.30 p. m. Several accounts were presented, which, on motion, were ordered to be paid. The case of Mr. Sovereign, which was laid over on Thursday evening, was again brought up, and on motion of Dr. Day, seconded by Mr. R. G. Trotter, it was unanimously resolved that he be expelled from the society. The committee on essays and subjects for discussion at next meeting, recommended the following, which were adopted:—Dental physiology, S. Zimmerman; Fang filling; E. Thomas; Facial neuralgia, C. S. Chittenden; General extraction of teeth and roots; J. W. Elliot; Different materials used in filling teeth, H. T. Wood; Best methods of preparing cavities, S. M. Brimacombe; How to prepare and insert the gold and finish the filling, S. T. Clements; Anæsthetics in dental operations, Dr. Day; Taking impressions, S. Woolverton; Selecting and arranging teeth for the mouth, Dr. Willmott, Vulcanizing rubber, L. Clements; Pyroxeleine base, W. C. Adams; Treatment of teeth with dead pulps, J. Bowes; Treatment of teeth with exposed pulps, Dr. Neiles; Preserving the teeth by filling, Dr. Willmott; Inflammation of dentine, T. W. Raines; Manufacturing teeth, F. M. Clark; Possibility of preserving shells of teeth, F. G. Callender. The committee also recommended that the President be instructed to arrange with Dr. Atkinson, of New York, to be present at the next meeting. The committee appointed to draft petitions to the Legislature and Lieutenant Governor in Council reported drafts, which were adopted and signed by all the members present. The Secretary was instructed to obtain the signatures of the members not present, before the meeting of the Legislature. It was then moved by Dr. Willmott, seconded by Mr. H. T. Wood, That when this meeting adjourns it stands adjourned to meet next year in the city of Toronto, on the day following that fixed for the election of the Board of Examiners of the Royal College of Dental Surgeons, Canada. The committee on essays and subjects for discussion for the present session presented their report, which was adopted. Dr. Rowe then read an admirable essay on "Remarks on Filling," which provoked considerable discussion, and at the request of Mr. Beers was ordered to be published in the *Canada Journal*.

As most of the members were obliged to leave by the evening trains a large part of the programme was necessarily omitted. The Treasurer also presented a report showing a balance on hand of $83, and on motion it was adopted. The meeting then adjourned.

PROPOSED AMENDMENTS TO ONTARIO ACT.

In order that the following proposed amendments to the Ontario Act may be seen and read by all dentists in the Upper Province, we send this number of the *Journal* to every one, whether subscriber or not.

An Act to amend the Act of the Province of Ontario, passed in the thirty-first year of the reign of Her Majesty, intituled: "An Act respecting Dentistry," and chaptered thirty-seven.

Whereas it is expedient to amend the Act of the Province of Ontario passed in the session held in the thirty-first year of the reign of Her Majesty Queen Victoria, intituled: "An Act respecting Dentistry," and chaptered thirty-seven: Therefore, Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1st. Every Board of Directors to be elected after the passing of this Act shall consist of seven members, of whom any four shall form a quorum.

2nd. Every Board to be hereafter elected shall hold their first meeting on the day following the election of such Board, at noon, at such place in the city of Toronto as may, from time to time, be fixed by the Board.

3rd. Section sixth of said Act is hereby amended by striking out the words "first Tuesday in June," and inserting the words "third Tuesday in July, in the City of Toronto."

4th. Section tenth of the said Act is hereby repealed, and the following substituted therefor:—"10. The Board shall have power and authority to appoint one or more examiners for the matriculation or preliminary examination of all students entering the profession. Such examination shall be passed prior to entering into articles of indenture with a licentiate in dentistry, and the commencement of study shall date from the signing of said articles. The Board shall also have power and authority to fix and determine, from time to time, a curriculum of studies to be pursued by students, and to fix and determine the period for which every student shall be articled and employed under some duly licensed practitioner, and the examination necessary to be passed before said Board, and the fees to be paid into the hands of the Treasurer of said Board, before receiving a certificate of license to practice the profession of dentistry."

5th. Section eleventh of the said Act is hereby repealed and the following substituted therefor:—"11. The said Board shall hold one meeting in each and every year, in the City of Toronto, at such place as may from time to time be fixed by the Board, for the purpose of examining students

granting certificates of license, and doing such other business as may properly come before them; such meeting to be holden the first Tuesday in March, and to continue from day to day until the business before the said Board shall be finished; but no such meeting shall continue for more than one week."

6th. Section fourteenth of the said Act is hereby amended, by striking out the words "third Tuesday of January and July, whichever shall first happen," and inserting the words "first Tuesday in March."

7th. The said Board shall have power and authority to make arrangements for the establishment of a Dental College in the City of Toronto, either in connection with some existing University, or otherwise, and to appoint the Professors in the same.

8th. The said Board, and the Professors of the Dental College so established in the City of Toronto, shall constitute a body to be called the Senate, any seven of which body shall form a quorum, which body shall have full power and authority to confer the degree of Doctor of Dental Surgery upon the persons mentioned in the next section of this Act, upon their passing such examination as the said Senate shall from time to time determine.

9th. All persons who have been constantly engaged for ten years or upwards, in an established office practice, in the practice of the profession of dentistry, and all persons who have attended two full terms in any recognized Dental College, and all persons who have attended one full term in any recognized Dental College, or two full terms in any recognized Medical College, and in addition thereto have had five years' office practice in the practice of the profession of dentistry, shall, upon proof thereof, and upon payment of such fees as shall from time to time be fixed by the Senate, and upon passing the examination mentioned in the next preceding section of this Act, be entitled to, and receive the degree of Doctor of Dental Surgery.

10th. Such Senate shall hold a meeting annually, on the first Tuesday in March, in the City of Toronto, at such place as shall from time to time be fixed by the Senate, for the purpose of examination for and conferring such degree.

11th. All regularly licensed practitioners in Dental Surgery shall be exempt from service on juries, and shall receive due compensation for the loss of time occasioned by their retention as witnesses in courts of justice, and shall be entitled to all the rights and privileges conferred upon physicians and surgeons.

12th. Section eighteenth of the said Act is hereby amended by striking out the words "not exceeding twenty dollars," and inserting in lieu

thereof the words "of not less than twenty nor more than fifty dollars, and to the costs of prosecution"; and by inserting after the word "penalty" the words "and costs;" and by inserting after the words "goods and chattels" the words "and in default of such distress the offender shall be liable to imprisonment in the common gaol of the county in which such conviction shall take place, for a term not less than one month nor more than two months."

13th. All parts of the said recited Act which are inconsistent with this Act are hereby repealed; but such repeal shall not invalidate any thing done thereunder.

DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

Licentiates of the Province of Quebec are notified that a meeting will be held in Montreal, at the Mechanics Hall, on Tuesday, the 19th of September, at 3 o'clock p.m., for the purpose of electing a new Board of Trustees and Examiners for the next ensuing two years, and discussing some proposed amendments to the Act of Incorporation. The importance of this meeting cannot be over estimated, and we hope to see every licentiate present. A good number have not as yet attended any meeting, and we hope they will begin with this one.

SELECTED ARTICLES.

PHOSPHATE OF LIME.

BY J. M. PORTER, D. D. S.

It would seem from the many articles published in dental journals advocating the use of phosphate of lime, in all cases where that constituent seems to be deficient in quantity in the teeth, that many dentists regard this as the only successful treatment in all such cases. And believing that many are laboring without securing the desired results in using this remedy, we will endeavor to give a reason for their want of success.

The observing dentist, who never makes an operation in the mouth without closely examining the cause of decay, will many times see that constitutional defects are having as much influence in producing decay as such local influences that are sometimes present.

It is well known that loss and reproduction is constantly going on in the body, that whether formation or destructive assimilation predominates,

will depend upon general systemic conditions, and *not* upon the amount of any *single element* taken as food. Scientific investigations prove that a given amount of carbon, nitrogen and hydrogen, taken as food into the organism will not produce the same amount of physical force in different persons We may go further and presume that the same amount of food is equally digested in both cases. And further, it is conceded that any kind of nutriment entering tissues is not proof that it *all* enters the cells where the greatest amount of oxidation takes place. If, then, a portion of our daily food enters the portals of the tissues without entering the inner chambers of the tissues, but passes out again unchanged by a reversal of the forces that carried it in, thereby becoming dead instead of living matter, will giving phosphate of lime have any beneficial influence, supposing this element seems to be deficient in the teeth? Can you relieve such a condition by giving a single element of food, when nature refuses to partake of the food already digested? On the other hand we will suppose that excessive waste is being carried on to such an extent that any part of the body suffers as a result. Will simply giving a single article of food have any influence in checking this excessive waste? If so, upon what principle does it operate?

From observation and experiment, we have found that proper food (that is, such food as contains the elements which seem to be deficient in quantity,), if used judiciously, will remedy a defect of this kind, *if any change of diet can.* If nature refuse to appropriate *food containing such elements as are deficient*, how can we expect better results when we give a single element of food?

Every dentist who is observing will see a marked difference in the structure of teeth, as he operates in the same mouth for two or three successive years, when the patient has been living on the same diet, and in the same climate, and seemingly in perfect health all the time, and when frequent tests convince the dentist that no local influences are present that could produce these changes.

We can only account for these changes by presuming that at one time nature refused or failed to appropriate the food digested, for we surely can not attribute it to any change of diet when there was no such change.

In conclusion we claim that it is impossible to modify general systemic conditions by giving as food a single element, which seems to be deficient in some parts of the body. We can not force nature to appropriate food by such treatment, neither can we check an excessive waste. This thing of treating symptoms is in our opinion very much like reporting personal experience at dental meetings, neither having the desired influence.—*Register.*

EXTRACTING TEETH DURING PREGNANCY.

BY DR. H. E ROBINSON.

It seem to be laid down as a rule by nearly all surgical writers, and indeed is held in practice by nearly all surgeons and dentists, that teeth should not be extracted during pregnancy. Now we are all aware that the uterus is closely connected by the system with the teeth, and that this connection seems more sensitive when the uterus is in a gravid state. But it has always seemed to me that this fact was but another argument in favor of the extraction of the aching tooth, especially when the pain is caused by chronic periodontitis. I am not in favor of indiscriminate extraction of teeth, but will strive as hard as any dentist to save a tooth whenever possible. This should be done in all cases. But for periodontitis, I know of no surer cure than extraction. In the past two years I have had five patients who were pregnant, come to me afflicted with inflammation of the periosteum, some of whom had been kept awake for two nights, and in each case I extracted the offending tooth without any bad result whatever. In the last case, the woman was within about a month of her time for delivery, but she was suffering so acutely from the diseased tooth that I very carefully extracted it, and all was well. Therefore I conclude that, *where no other remedy is possible*, extraction is better than prolonged suffering.—*American Journal Dental Science.*

CONTOUR FILLINGS.

By Edgar Park. Read before the Missouri Dental Association, June 1871.

Severe crititcism has been so freely indulged in by many, upon this subject, that perhaps it may not be amiss to expend a few moments in considering the relative merits of the contour operation where indicated, and others which may be performed.

This operation is indicated where the loss of a portion of the tooth has occurred.

There has never, to my knowledge, been a variety of opinion concerning the advisibility of restoring the general contour in cavities having four solid walls to retain the plug. In simple, and even in compound fillings, I don't remember to have heard any objection urged to restoring, as nearly as possible, the lost portion; on the contrary every good operator recommends filling all these cavities sufficiently full to be susceptible of being finished in such a manner that the surface of the filling shall be continuous with the surface of the tooth.

But in cases where a considerable portion of the crown of the tooth has been lost, arises the question, as to the advisability of contour fillings.

I imagine no one will distent from the statement, that in dental operations the great design is *utility*, which in the teeth, consists in the preparation of food for deglutition and digestion ; in their instrumenttality in the enunciation of sounds, and in preserving the natural expressian of the face. To preserve the utility of each defective organ, it should be operated upon in a manner to preserve as nearly as possible the purposes for which it was designed—the teeth being doubtless fashioned by nature upon the most desirable plan for their several functions. To retain, then, as great an amount of the natural structure as is possible, in a sound healthy condition, is demanded.

A full set of perfectly formed, regular, natural teeth, is undoubtedly the best masticative apparatus that can be devised ; and as a personal-feature it cannot be improved upon —unquestionably a better model to follow than any idea of our own.

In a well regulated mouth there is no more masticating surface furnished than is designed for use, or than is necessary to equalize the process of digestion with the other organs, whose functions follow that of the teeth. Contour filling is therefore indicated in broken down malors. Indeed its necessity should be recognized in all cases where the tooth can be retained in a healthy condition.

In the bicuspid teeth, where serious decay has occurred in the proximal surfaces, is it especially indicated. Not only is one bound to furnish the patiant his full allowance of masticating surface, but for the benefit of the individual teeth, their contour should be restored. I think it is safer to say that more operations fail in the approximating surfaces of the biscuspid teeth, than in any other location in the mouth, and in many cases where the utmost care has been taken, frequently the failure is attributable to the cause designed to prevent it—the free space so frequently left with the idea that through this, these teeth may the more easily be kept clean. This I apprehend, is a mistaken theory in operations of this nature. The free use of the file between these teeth is almost universally necessary in order to remove the frail margins of enamel and secure firm reliable margins, If these cavities are filled and finished squarely across, the crowns frequently approach each other until the surfaces of the plug, dentine and enamel are in contact, when decay will almost certainly again attack them at some point of contact. If you will call to mind the shape of these teeth and their disposition in the alveolus, it will be readily seen why this is more likely to occur in these

than in other teeth. A better method to adopt in filling such teeth is the one now advocated—after having filled the cavities, continue the operation until the contour of the teeth is restored, and the exposed dentine and enamel rods perfectly protected. After finishing, the convex surfaces of the plugs are in contact, rendering impossible the calamity mentioned above.

Coming now to the incisor teeth, this mothod of operating—which has been so injustly and bitterly denounced by many as unsightly, fancy operations, advertisements, etc., etc.—I urge again the question of utility. This method of treating results in fewer objections than any other. But one can be urged against it (on the part of the patient). The exhibition of metal is objectionable, that is all, the tooth is stronger, more serviceable, and will be preserved much longer than by means of any other operation.

In these operations gold is the only material with which most operators can produce satisfactory results. Of this there are many preparations. To enter into a discussion as to the relative merits of the different preparations is not in the province of this paper. Perfect operations may be produced with each by the exercise of sufficient care and skill. Experiment on the part of each operator is a more reliable method of determining which preparation is most desirable in his hands, than in depending upon what any man says.

I shall not occupy your time with any elaborate detail of methods of performing contour operations upon various teeth, presuming each to have a method of his own, of much greater value to him. However, a paper upon this subject would perhaps, be unnecessarily incomplete did not the writer give some general ideas of the manner in which he would proceed in a given case. Suppose the right central incisor to require this operation: with a file I should reduce the fractured and uneven edges to a stong regular margin, affording material sufficient to furnish a reliable wall to the cavity, which now is to be made the principal retaining point for the superstructure. Now excavate, of course, removing all disintegrated and unsound dentine, being careful to avoid the sacrifice of an unnecessary amount of dentine for the sake of securing deep undercuts. They are unnecessary and objectionable, inasmuch as they materially weaken the walls. Having prepared the cavity in a manner to afford it the greatest amount of strength; a very fine file or polishing stone should be used on the magin to which the gold is to be adapted. The indispensable rubber dam is next adjusted over four or five teeth—The centrals, laterals, and right cuspid — inserting a wooden wedge between each two of the exposed teeth, beginning between the centrals. By the support thus

secured from adjoining teeth, and the force required to fill is distributed among several teeth, and the severity of the malleting process is astonishingly lessened. Thoroughly dry the cavity, and through a magnifying glass make a last observation. Being satisfied that the tooth is properly prepared, we proceed to introduce the gold—avoid haste—thoroughly impact each piece of gold before introducing another. The use of very small delicate points I find indispensable. Having perfectly filled the cavity, commence extending the gold over the cervical margin, building upon the filling against the walls from without and within. The force should be directed at an angle upward against the plug in every direction, looking toward its surface. If this is done the impaction of the gold will be finished at the mesial corner of the filling. The gold introduced we have but to finish. This is done, by all alike I presume—by means of files, burrs, stone, polishing powders, etc. No less care, however, should be taken in the last steps of the operation than in the first. The margin of the plug must be polished to a perfect surface with the margin of the cavity. The secret of success in these, as in all other fillings, is thoroughness. To produce perfect finish upon an imperfectly introduced plug is impossible. No amount of burnishing and polishing will conceal the faulty operation from the critical eye.—*Missouri Dental Journal.*

DENTAL FEES.

"All works of taste must bear a price in proportion to the skill, taste, time, expense, and risk attending their invention and manufacture.

Those things called dear, are, when justly estimated, the cheapest; they are attended with much less profit to the artist than those which everybody calls cheap.

Beautiful forms and compositions are not made by chance; nor can they ever, in any material, be made at small expense.

A competition for cheapness and not for excellence of workmanship, is the most frequent and entire destruction of arts and manufactures."

JOSIAH WEDGEWOOD.

BIBLIOGRAPHICAL NOTICES.

THE PRINCIPLES AND PRACTICE OF DENTISTRY, INCLUDING ANATOMY, PHYSIOLOGY, PATHOLOGY, THERAPEUTICS, DENTAL SURGERY AND MECHANISM. By CHAPIN A. HARRIS, M.D., DD.S. 10th Edition. Revised and Edited by Philip R. Austen, M.D. With 409 Illustrations, 794 pages. Philadelphia: Lindsay and Blakiston, 1871, cloth, $6.50, leather, $7.50.

Messrs. Lindsay & Blakiston have laid the dental profession of America under deep obligations to them for the enterprising and creditable manner in which they have issued at various times, the text-books required by the dental student, books having comparatively a limited circulation, and therefore less profitable to the publishers than general literature, and which ought to be in the library of every dentist in the land.

A new edition of Harris was a necessity. Dental science in its rapid strides, soon ignores the dictum of its teachers, and compels them to follow in its wake with revisions, or, like Maury and Fox, become obsolete. Some of the most important "principles and practice of dentistry" have only been fully demonstrated since Harris died, and the present edition was absolutely necessary to maintain the high position to which the work, notwithstanding its original faults, is entitled. Perhaps there is no one dental book which has been more read than this; and certainly the simplicity of its style gives it a charm for students, while the popularity of its author, as one of the pioneers of dental literature and education on this continent, has always recommended it to every lover of the profession.

This work is one of those which are vastly improved by revision. The commentators of Homer and Shakespere may have made them more readable, but the oldest Homer and Shakespere are the most correct. In poetry and belles-lettres we prefer to read authors just as they wrote, even though it be in orthography such as Spencer's. Half the revised editions of æsthetical writers give us erroneous conceptions of their individuality. The genius of such writers, if there is any genius in them, is indigenous, and not created by commentators. Not so, however, with works of science. Most such works bear revision, and need it to be perpetuated. The present edition of Harris is brought up to the advanced views of the present time. Though nominally edited by Professor Austen, it has united the co-operation of Professors F. J. S. Gorgas, T. S. Latimer and N. W. Kingsley.

The arrangement of the work is much more systematic than previous editions; Part First being devoted to Anatomy and Physiology; Part Second, to Pathology and Therapeutics; Part Third, to Dental Surgery; Part Fourth, to Dental Mechanism. The early editions of Harris had a large amount of extraneous word-building, which we are glad to observe has been abbreviated and made more concise. Indeed, the composition of the present edition does credit to the editor and his co-laborers. While regretting that the researches and opinions of some writers of the United States—whose labors have certainly raised the character of *the science* of Dentistry—has been altogether ignored, even as reference, there is no omission in the work which could persuade us to do without it, and sufficient revision to make all past editions pass into disuetude. We hope the enterprising publishers will have hundreds of orders from Canada. A reading profession is what we need in this Dominion.

B.

Boston Journal of Chemistry. — This is a very useful home scientific journal, devoted to the arts, agriculture and medicine; in fact, one intended to popularize science and scientific investigation. It should be in every home. It is published in Boston, 150 Congress st., at $1 a year.

The Herald of Health, and Journal of Physical Culture.—New York, Wood & Holbrook, 13 & 15 Laight st., $2 a year. Another useful and much needed periodical, ch number well worth the annual subscription.

American Journal of Chemistry, a monthly Journal of Theoretical, analytical and technical chemistry. Vol. 2, No. 1, C. F. & W. Chandler, 49th st., cor. 4th Av., New York. $5 a year.

EDITORIAL.

THE MEETING OF THE ONTARIO DENTAL SOCIETY.

The third annual meeting of this society was the most harmonious and pleasant held since the associative principle first took root in Ontario. We were sorry, however, to miss some of "the old familiar faces," and many others who certainly would have found it to their advantage to have spent a few of their holidays with their professional brethren. The consideration of the proposed amendment to the Ontario Act necessarily

occupied much time; but the general business was expedited very fairly It is expected that future meetings will be more exclusively practical, as many come considerable distances to gain practical demonstrations, and practical information that will subserve them in daily practice. The committee on essays and discussions for the next meeting have recommended a good series of subjects, and if those appointed to prepare papers will set to work and do their best—and they have a whole year before them!—we are sure to have a very practical and profitable meeting in 1872. Procrastination is the thief of labor, and we trust that none of he essayists appointed will shirk their duties, or appear a year hence with apologies of having lacked time. Let every member aim to make the next meeting one of specially practical usefulness, and continue that courtesy and *esprit de corps* which marked the meeting just closed. The society seems to have got into capital working order, and we hope it will enlist every dentist in Ontario. The elections passed off without opposition and yet with interest; and the action with reference to the unprofessional conduct of a Hamilton dentist was prompt and proper.

We think that the practical utility of most of the essays appointed for next year would be increased, if the essayists would accompany their papers with specimens and models which would illustrate the views they wish to represent. B.

DENTAL ADVERTISING.

When we call to mind that the Acts of Incorporation created dentistry in Canada as legally a Profession as medicine or law, we should seriously endeavour, even at some sacrifice, to live up to the strict letter of professional ethics. In the past history of many honorable practitioners, there have been acts in connection with the mode of bringing themselves before the public, which at the time were, perhaps, essential, and at least fashionable. The circumstances existing when dentistry was not recognized as a profession, and there were neither qualifications required for practice nor any legislative and associative check on rampant charlatanism, when a man could dub himself "surgeon dentist," even though he couldn't sign his own name, and if to save his life from the gallows couldn't tell a deciduous tooth from a permanent, are altogether different from the circumstances existing to-day. What was allowable and apologetical then, because there was neither prerogative nor preventive, is wrong and unprofessional now, because we assume and have the status of a profession, and regular organizations for education and reform. There is now a disposition, we sincerely believe, among the very large

majority of the Canadian profession to draw a line between the fashions of the past and the present, and to eradicate certain associations which have long ago been deemed unwise and unprofessional. The difficulty lies between the quack, and some few who think they can survive only so long as they imitate the quack's means of advertising. The large majority of the profession favor the code of ethics, but an impediment to their good intentions exists in the few competitors whose souls can never rise above the level of their pockets, and who do not care a fig for any other honor, personal or professional, than that by which they can realize the most money. There are men in the dental profession of Canada to-day who for years have been persistently bartering their own self-respect, and the fair fame of the profession, to gain a practice, and who cannot be reasoned into the belief that they will ever be brought to grief and disgrace. But unless intelligence and education retrogrades instead of advances in Canada, and those who have put their shoulder to the wheel of progress lack energy and persistence, a *dies iræ* will come for dental quacks, and dishonor to any who take issue with them.

There is one matter which we may as well dispose of here. We have referred to the past history of the profession, and the fact that men got into its ranks who did it no honor; but, let it be remembered that, while holding the principle that a candidate for entrance to the dental profession should at least have a fair education, we do not insinuate anything against a candidate's previous career. Let a man be honest and educated, and we do not care whether he was a bootblack or a barber. "A man 's a man for a' that." The atomic theory was propounded by a shoemaker who turned chemist, and many of our best surgeons and dentists were previously earning an honest living in some other sphere. But, unfortunately, there are instances where men who have failed at shoemaking and barbering became dentists in a week, and, not satisfied with legitimate means of obtaining a practice, have resorted to every known trick and possible puff, assuming superior knowledge, superior skill, special secrets, patents and remedies. The origin of every unprofessional means of attracting attention can be traced to this source.

One of the essential objects of the voluntary associations is to act on these men; to coerce and reform, not to force and offend. If those who love the profession, and who rank high as operators, only loved their own ease and their own pockets, they would assuredly refuse to raise to an equality and to extend their information to men who stoop to unprofessional means of getting business. If it pays one who is ignorant of his profession to advertise, it would pay better one who is proficient, for the puffs of the latter would be *truth*, and those of the former *falsehood*.

But the reason why an honest dentist cannot compete with one dishonest, is simply because no honest dentist would operate with the sloven rapidity and ignorant indiscrimination of the competitor who fills teeth much the same as one would putty knot-holes, and whose dental practice is about as conscientious and expeditious as the prayers of the priests of Tibet, who grind out their piety on machinery similar to a hand-organ. Many who were poor operators, have availed themselves of the various educational systems in vogue, and have shown a desire to learn and reform, and we venture to say that not one has had cause for regret. But we cannot attempt to conceal the fact, that there is an element in the profession which consistently ignores any code of ethics, and whose professional honor has a steady downward tendency.

The question of advertising demands attention. By means of improper advertisements, the profession is degraded in the eyes of the public, and, but for it, quackery would be almost checkmated. We are well aware that our views of this question are not palatable to some; but we know that many advertise, use show cases, &c., only *in self-defence*, and would rejoice for the adoption of effectual means to repress them generally. But let us examine a few points dispassionately, and suggest a remedy. Custom is more persuasive than reason, especially where the pocket is concerned, and some may be enthusiastic leaders in reform to sacrifice the quack, who are not consistent when those reforms encroach upon their own domain. That is unfair.

For instance, in the matter of advertising in the press. The excuse given for the general use of dental cuts—some of them most barbarously revolving molars, bicuspids, forceps, and excavators around a set of teeth as the planets revolve around the sun—is that they catch the eye and save the reader the trouble of looking over the paper for a dentist. True, but why then object to the show case, for many of its users say that it is only to catch the eye of the passer-by, and save him looking all over the street for a dentist. One is at the office door, the other in the papers. They are not significant either of the true duties of the dentist—to save the teeth. They have a mechanical significance, with the anvil and the plough. They are as unprofessional in the advertisement of the dentist, as a labelled bottle or a pestle and mortar in the advertisement of the physician. They give an excuse for the show case, and are repugnant to good taste.

The use of references was long ago deemed unprofessional.

We publish once more the following resolution, which was passed in the United States as far back as 1845, at a time when the profession was very far behind its present standing:

"That this society (the American Society of Dental Surgeons) view the publication of dentists in connection with their advertisements, of letters of *recommendation from divines and doctors of medicine*, and, in short, all who are not acquainted with dental practice, with decided disapprobation, and they would especially recommend to all its members, who may be pursuing this course, to discontinue a practice *savoring so much of quackery*, and which is so well calculated to degrade the profession."

If these references are intended as a recommendation of ability, who is to decide that the parties referred to are qualified judges? We know for a fact of some whose names are paraded in the papers as "references" who are ignorant of the true qualifications of a dentist. If these references are recommendations of moral character, we are sorry for the parties who feel they need them, and yet glad to know they have the candor to avow it; and whatever they are intended for, they are wrong, because skill is the best recommendation, and dentists in decent practice ought to need no other reference than that kind of gratuitous advertising which our patients give us.

Since writing the above we have met with a paper on Dental Empiricism, written in England about fifteen years ago, from which we will make a few extracts, first suggesting to the Boards of Examiners and the Dental Associations of Canada, the propriety of early attention to this subject of advertising, and the recommendation of various forms for the use of licentiates. We wish it to be borne in mind that to the modest card and plain advertisement we do not object.

"The advertiser depends upon his advertisements; and herein lies the grand distinction between him and the honest practitioner. The empiric never desires to see his patient a second time; the advertisement that brought the dupe of to-day will bring him another to-morrow. The non-advertiser feels that his reputation—indeed, his very existence—depends upon his acting honorably to his patient. He can only increase his connection by the recommendation of one to another. The patient may feel confidence that he is dealing with a man who lives only by his good name: not so the advertiser, however honorable he may be (and we will allow they are not all dishonorable,)—he obtains his patients in so questionable a manner, that his skill must at all times remain doubtful. If he is a clever man, what need has he of advertisement at all? Ability will sooner or later meet with some amount of recognition; therefore the dentist who requires advertisement must necessarily be the inferior practitioner, executing the worst work, relying upon his advertisement, without which he would be without patients, as he is without skill.

"The answer to much that we have advanced will be, that the private and high-priced dentist (as the empirics will call him) demands higher fees and complains at the charges made by the advertiser. This we unhesitatingly dispute, and freely declare that the charges, on the whole, made by the private practitioner are, if anything, less than those of the empiric. It is true, he will not condescend to operate after the advertiser's fashion. Stopping a tooth is not merely filling it with any description of paste; and artificial teeth should possess some amount of finish,—the cheapest not being always considered by rational beings the best. Again, the advertised prices bear no proportion to the prices really charged, excepting in a few solitary instances; for if a man can afford to spend pounds a year in advertisements, his profits must be obtained from some one.

"Another mode of gaining notoriety, or, more correctly speaking, of attracting attention, is by the show-case, which we must also unhesitatingly condemn, and upon these grounds:—The show-case does not necessarily contain specimens of work executed by its exhibitor. Every practical dentist is aware that these cases may be obtained ready fitted up with work in all styles. But even granting that it is the work it professes to be, it does not follow, however well it may be executed, that such work will fit the mouth, or could be worn with comfort. Some may argue that the show-case is no more than the shop-window, in which is exhibited the wares of the artificer. But the cases are widely different. We may see a chair or a table, a piece of jewellery or a garment, exhibited for sale, we can purchase the chair and place it in our rooms. But such is not the case with a set of teeth. Every customer must be separately fitted, and in no instance could the dentist remove from his show-case a piece of work and transfer it to the mouth of a strange patient. We know that many regard the show-case as simply emblematic of the dentist's calling; but upon these grounds we should excuse the exhibition of a golden tooth or a gigantic pair of forceps."

B.

DENTAL FEES IN CANADA.

The question of fees is momentous. It not only involves considerations of pecuniary interest, but urgent points of professional elevation, and we purpose briefly alluding to lessons which both these considerations teach. There seems to be a monomania among a portion of the profession in Canada for cheapening dental services, and this without any complaint or demand from the public. We can perfectly understand how-

the vigour of competition will induce some men, who only regard the profession as a trade, to attract custom by low fees, but we cannot understand how any such competition can induce *honest* men to co-operate—though they call it "self-defence"—with quacks and imposters in degrading dentistry to a lower level than a trade. In many districts of Canada, shoemaking and blacksmithing are positively very much more lucrative than dentistry, and while tradesmen can afford to confine their attention to their one calling, the dentist—poor fellow!—has, in many instances, to take up with other indirect and direct sources of livelihood to keep body and soul together.

In legislating for the profession it had to be mainly incorporated as it was found, and licenses to practice had to be given in instances, not a few, to "five-years' men," in Ontario, and "two-years' men," in Quebec whose knowledge of dentistry was picked up much quicker than a blacksmith learns to shoe a horse, or a barber's apprentice to cut hair and shave. The men who are dishonest dentists would be just as dishonest in any other sphere, and, perhaps, the profession is not to blame for it is as much as humanity. Legislation can neither mend a man's manners nor make his morals—it may trim and train both; but the pity is that rogues in dentistry escape detection oftener than rascals in general, and have not yet had the experience of police and prison to overawe them. The injury done systematically,—by appointment!—to society by dental quacks, is incalculably greater than that even perpetrated by thousands of penitentiary convicts who suffer incarceration for their crimes. Yet the dental quack is a licensed rascal, and the greatest rogues are out of gaol. With such no honorable men can parley. They make verbal promises, but conveniently forget them, and may sign a fee bill but find a dodge to evade it. The press can be bought to lie for them, even editorially or with apparent editorial approbation, and their advertising support has a wonderful effect in softening any qualms of editorial reproach. Society in Canada has yet to be educated to discriminate between what is honest and dishonest in dentistry, and has yet to overcome the primitive and ignorant idea that we oppose quack dentistry only because it is cheap.

The quack dentist drags down the fees. He would get little to do if he did not.

Another class who are numerous, are situated in close proximity to the quack, or, may be, are subject to the raids of empirics from a distance. They hang out the banner of cheap work, and patients flock to them as ignorantly as ever they patronised the greatest medical humbugs of the age. Respectable dentists in the vicinity find their patients deserting them, and business decreasing. Then down comes their

fees from fear of loss: and finally keep there. The quack is met with his own weapons and wins. At this stage another ramification develops, and men, not arrant quacks, but most generally very poor dentists, and not always honest, step out with further reductions, and habituate their patrons to higgle and bargain—which all fish-women may stand, but not even all tradesmen would permit—and educate them to form a low estimate of dentistry and the dentist. In a locality where there are several dentists, one too often tries to monopolize the practice by reducing his fees to the very narrowest margin; and in some cases actually boosts up the profit and loss at dentistry by better profits in some auxiliary means of living, more lucrative and congenial. The next step of the cheap dentist is then to lose his enthusiasm for skilled expertness, and to resort to the subterfuges and tricks so well known to men who do not get half-paid for their labor; and to lay the flattering unction to his soul that the public is ignorant, and that artificial dentistry can replace what his conservative dentistry may botch. Hundreds of dentists who are poor operators to-day, are simply so because they have never been encouraged or half remunerated to do their best, and have irresistibly gravitated to a level beneath their possibilities and talents. While we might quite properly advocate higher fees for the profession on the very practical grounds of higher cost of living—an argument to which in every *trade* employers are willing to succumb—the dentist has one other argument to sustain his position. The plain facts of increased cost of living, and original inadequate fees are not to be overlooked; but the great sheet-anchor of an honest dentist who demands reasonably high fees is that the natural tendency of lowering fees is not only to diminish the appreciation of conservative dentistry, but to invariably deteriorate the quality of work performed. The very first effect of low fees is on the dentist. It is all moonshine to expect men to render services worth ten dollars for two. An operator who is poorly paid hastens slovenly through his work, in order to make out of several patients what he properly should have made from one. Well-paid men in any sphere work the best. It is nothing more than natural. A well-paid man is like a well fed horse and *vice versa*. The race of philanthropists who work mostly for love is extinct—it died out when civilization and taxes came in. Every city, town and village of Canada is richer to-day than ever; employers have larger profits, and the very house servants receive nearly double wages. The poor we always have with us, and in their case we must exercise Christian charity, and do it cheerfully; but the patients who support us are not the poor. The same classes who have always supported dentistry, are to-day getting their services rendered

in many districts for half what they paid ten years ago; and even allowing, for the sake of argument, that the fees were now generally the same for operating as some years ago, every one must admit that operative dentistry is far more conservative and advanced than it ever was, and that an intelligent public, able to appreciate this advancement, ought to be more willing to pay for it. We believe that there are few poor dental operators in Canada but would improve fifty per cent. did they receive respectable fees. It would pay them to keep up with the times, and to confine their thought and attention to one profession.

Another serious point. The cheap dentist is so often the very bad dentist, and the work for which he has been poorly paid so often fails, that a large part of the population are losing faith in dentistry altogether. They judge the whole profession from the failures of one or a succession of quacks or discouraged operators. The consequence is that thousands do not believe in conservative dentistry, but let the natural teeth decay, irregularities increase, neglect the teeth of children, and look forward to an artificial substitute as a relief from pain and decay.

The dental profession in Canada to-day is neither as useful nor respected as its own members might make it. Surely the associative work performed, and the free clinics from which many have admitted the benefit derived, must convince dentists who are not near as competent as they ought to be that their improvement is sought; and we seriously believe that, until this question of fees and a few points of ethics are more agitated and decided, the practical usefulness of every educational and mutual improvement system now in vogue must be comparatively impotent and often abortive. We beg every dentist in the Dominion to seriously reflect on the condition to which "cheap dentistry" must inevitably reduce the profession as a body, and ourselves as its practitioners and protectors. It may not be a new theory to many of our readers; but we are confident that, were the dental profession as harmonious on points of ethics and fees as our medical brethren, there would be plenty of scope and practice here for more dentists than there are in Canada, because the public would have more confidence, and would pay more attention to their teeth. As matters are, however, "cheap dentistry" and quackery are prejudicing the public, and the dental profession in Canada is overstocked. B.

A MUSEUM OF DENTAL SPECIMENS.

For several years we have been collecting and classifying specimens of abnormal development and disease connected with the teeth, intending to form a permanent museum, which would always be accessible to dentists, and also sent for examination to the various meetings of the dental

societies in Canada. The advantages of such a collection is at once apparent to all, and, while we would not venture to ask rare specimens to become virtually our own property, we have already received encouragement to believe that our friends will assist to some extent.

Cases of abnormal development and disease, models of peculiar defects of the palatine organs, &c., &c., with as full and accurate descriptions appended as possible, will be thankfully received and noticed in the *Journal*, and, if required, paid for. Those wishing to retain original models, could oblige us by sending a copy. We hope to find among them many cases worth illustrating in these pages.

We beg to acknowledge, with many thanks, specimens from H. G. Weagant, Morrisburgh; L. Clements, Kingston; J. H. Webster, Montreal; E. Lefaivre, St. John's; C. Brewster, Montreal; C. H. Wells, Sweetsburgh; Dr. A. Oliver, Kingston; C. Webb, Montreal. B.

HOW TO BEGIN.

Many hold back from contributing their practical ideas to a journal because they procrastinate until the spirit moves them to write elaborately or lengthily. We invite these parties to send any new suggestion, or otherwise, in as few words as they would tell them to a confrère. That is just the way to begin. Procrastinatoin is the thief of *ideas*, as well as of time, and if you have anything new to tell, do so as soon as possible, or some one a thousand miles away will save you the trouble and lose you the credit. B.

ECHO ANSWERS "WHY?"

If our well-to-do classes could pay sixty dollars for a single set of teeth on gold, fifteen years ago, why can they not now afford to pay from thirty to forty-five, for the same set on a material better adapted in the most of cases than gold? If to-day we can better fulfil all the requirements of a set of teeth with vulcanite or pyroxyline than we could fifteen years ago with gold or platinum, why should we give those who are able to pay, the greatest benefit of our improvements? If every improvement is to lower our fees, where and what, is the encouragement to improve?

B.

THE COUNTRY DENTIST.

In the next number we will consider the position and circumstances of the country Dentist, with reference particularly to advertising and fees.

We acknowledge with thanks, the receipt of three dental instruments in a case, both very neatly made by Mr. U. J. Chambers, Dentist, of Waterford, Ont.

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ORIGINAL COMMUNICATIONS

AMALGAM EXPERIMENTS.

BY S. P. CUTLER, M.D., D.D.S., New Orleans.

I took of good amalgam twenty-four grains and mixed with mercury, usual way, and expressed through buckskin to the proper dryness, then washed in alcohol and weighed. Thirteen grains of mercury had been retained. After two weeks, I weighed again and found a loss of two grains, the whole weighing thirty-five grains, a little less than half as much mercury as of silver and tin. The small amount of evaporation of mercury in thirty-five grains of amalgam is so insignificant, that no possible harm could take place by the use of even that amount at one sitting, which would be sufficient to fill several quite large cavities, though in some extreme cases double the amount or more may be used in one tooth, even then no danger of salivation need be apprehended in any subject.

By applying heat with the blow pipe the dry lump became soft and plastic, as when first mixed, only a little more brittle.

The chemical affinity between the mercury, tin, and silver, is very strong and not easily broken up, and is known as the law of adhesive affinity or that of wetting, which is explained in this way: Any liquid whose affinity or cohesion is greater for any solid than the cohesive attraction of its own molecules, a perfect solution or saturation takes place.

Again, any liquid whose affinity or cohesion for any solid is more than half what it is among its own molecules, simply wetting takes place, nothing more.

Any liquid whose affinity for a solid is less than one-half what it is among its own molecules no wetting takes place at all, as mercury and glass, porcelain, and many other solids, as mercury and bone or dentine demand. The reason why water and oil or mercury do not unite

depends on this same law. The word adhesion and cohesion may both be used in the above explanation. This specimen softened by heat, and gave up the mercury, though rather explosively, so that I could not ascertain the final result by the blow pipe. In fact, this is a feeble fulminate.

Pure silver amalgam.

Twenty four grains of pure silver filings combined with 28 grs. of mercury when expressed through buckskin as in ordinary use of amalgam in filling teeth. It will be seen that pure silver requires more than double the amount of mercury to amalgamate it than ordinary tin and silver combined.

Pure silver does not make a tough and tenacious mass, only slightly adherent. Washing with alcohol does not produce any dark color as in ordinary amalgams.

No loss or subsequent hardening takes place by standing for six days, weather hot. On applying heat with the blow pipe, light colored fumes began to pass off and continued to escape frequently in sudden gusts, and continued up to a red heat, at which temperature I kept it for a few minutes until all fumes ceased. It did not become soft and plastic at all, like ordinary amalgam, but remained hard during the process, becoming light yellow, and did not lose any of its cohesive properties by heating. There was a loss of twenty-four grains out of the twenty-eight of mercury.

Amalgam of pure tin filings.

Twenty-four grains of pure tin filings took up fourteen grains of mercury, forming a mass in all respects similar to ordinary amalgam: did not lose in weight by standing several days. Washing with alcohol produced about the same amount of dark matter as common amalgam. There was no subsequent hardening from the first melting on charcoal, for fifteen minutes caused no loss in weight, no fumes escaped. After cooling, the mass was found to be quite hard and tough, polished well, and pure white.

The probability is that this amalgam would not harden sufficiently in the tooth to make a good filling.

Silver coin amalgam, or amalgam of olden time.

Twenty-four grains of coin filings, takes up thirty-two grains of mercury to amalgamate. After several days' standing I found the mass hard and firm, had lost scarcely a grain in weight. On applying heat it did not become at all plastic, but remained hard. I continued the heat up to redness, for at least twenty minutes before the mercury fumes ceased passing off; on weighing, I found nearly all the mercury had

escaped; the lump still remained hard and firm though brittler than before applying heat.

Now the question is what holds the filings together, when all but a trace of the mercury has been dispelled by heat. Washing with alcohol produced dark matter.

PURE GOLD AMALGAM.

Twenty-four grains of pure gold filings takes up fifteen grains of mercury to amalgamate. It instantly becomes white like pure silver amalgam; on standing several days there was no loss in weight, neither did it set or harden to any extent, in consequence it will not answer for filling teeth. There was no stain from washing. On applying heat with the blow pipe, up to redness, for five minutes, it became yellow and lost all the mercury and two grains more. The filings were not melted, and the mass much tougher than before heating. On melting the gold there was no more loss of weight, the gold apparently as pure, and worked as well as though there had never been any mercury in combination.

This amalgam would be a disideratum in practice if it could be made to harden in any way.

EIGHTEEN CARAT GOLD AMALGAM.

Twenty-four grains of eighteen carat gold *silver alloy* takes up twenty grains of mercury to amalgamate. It does not become so instantaneously white as pure gold, neither was the white so intense.

On washing with alcohol there was scarcely any stain. After several days drying there was no loss by evaporation, the mass becoming quite hard and brittle. This amalgam will answer a very good purpose in some cases for filling teeth. I have had a filling of this kind in one of my back teeth, five or six years, now perfectly sound, only dark on the surface owing to the silver it contains.

On applying heat to the specimen, and raising up to redness for five minutes, all the weight of mercury disappeared still leaving a hard firm mass, which takes a fine polish and has a golden colour.

AMALGAM OF CADMIUM.

Twenty-four grains of cadmium filings amalgamate with forty-two grains of mercury, and sets or hardens almost instantaneously if quite dry, even without squeezing through buck skin. On rubbing in the palm of the hand the the finger becomes black, and on washing with alcohol about the same amount of dark matter is produced as in comon amalgam.

On drying for several days it looses nothing in weight.

While rubbing up in the palm of the hand a considerable amount of

heat is developed, I presume, from the rapid conversion of the liquid mercury into a solid, the latent force of the fluid mercury being transformed into sensible heat.

This amalgam is almost certain to destroy the nerves in all teeth filled with it, turning the tooth yellow and staining all the balance at the line of the gum the same color. This yellow stain is the result of a yellow soluble oxide, the fillings remaining white owing to the solubility of the oxide.

The specimen lost one grain after several days drying. On melting on charcoal it does not evaporize or loose in weight, and melts at a very low heat, and remains fluid a long time and retains the white color.

After being melted it is very tough and may be hammered or rolled into a plate, and cuts easily with a knife. This amalgam may be found valuable for some purposes out of the month.

There are some dentists still using this amalgam to my knowledge for filling teeth. It should never be used in the mouth under any circumstances.

By heating cadmium sufficiently hot, yellow vapors of the oxide of the metal are formed. Mercury unites readily and hardens with this metal, but does not harden to any extent when united with any of the other simple metals experimented with. Why this is so, I am unable to say, unless it is from the fact that mercury and cadmium are the only two metals whose combining volumns of vapor are double that of any other elementary bodies. All good amalgams must be composed of at least two metals besides mercury. None of the above metals decompose water to any extent under ordinary circumstances.

I experimented with platinum and mercury, also aluminum and mercury, but found that neither of them formed metallic amalgams with mercury, only oxides of which I shall have occasion to speak sometime, under another head, more especially that of aluminum. This metal is one of the most selfish and unfriendly of all known metals, refusing to unite or form any metallic alliance with any other metal. This is a great and wise provision in natures economy, this metal forming as it does the basis of most soils; the earth would be but a barren waste if this metal held strong affinities for other metals; when the earth was in a melted state alloys would have been formed without end so as to have prevented its capacity for uniting with oxygen to form clays.

The metals suitable for amalgams are reduced down to three, silver, gold, and tin, mercury forming the amalgamating metal. Tin and silver make the best, silver and gold answer very well, gold and tin is too brittle and hard for practical purposes it does not harden at all when

amalgamated; none of the other metals will answer as they would not stand in the mouth.

ESSENTIAL PRINCIPLES IN FILLING TEETH.

BY DR. R. C. MOWBRAY, DENVER, COLORADO.

Read before the Illinois State Dental Society.

The fact that a large per cent. of fillings, from the hands of the average talent of our profession, fail to effectually preserve teeth, forces the fact upon us that the "essential principles in filling teeth" are not as generally known, and not in constant practice, as they should be.

The "principles" presented in this paper, are those whose observance are obviously necessary to success. It is familiarly stated "no two operators operate alike;" yet, if principles *were understood*, I am confident there would be more uniformity in operating, and greater success as to the result.

For the better consideration of our subject, we divide it into, first, principles to be observed in the preparation of cavities, and, second, principles for filling properly prepared cavities.

PREPARATION OF CAVITIES.

1. Have well formed instruments, nicely tempered and sharp. From the unadaptability of instruments not unfrequently decay in a remote portion of the cavity is not removed; or, if removed, it is by the exhaustion of an unnecessary amount of time. If an instrument is poorly tempered it cannot retain an edge; hence, it annoys the operator and gives the patient unnecessary pain.

2. All decay should be removed from a cavity previous to filling. Of late some operators of fair reputation, have ventured to leave a portion of decay in cavities that nearly or quite approach the pulp, in teeth where a calcareous degeneration has removed a large per cent. of lime salts, and a gelatinous dentine (if I may be allowed the term) presents itself. Subsequent loss of the tooth is the general result. It must be distinctly understood, the slightest decay cannot be tolerated. I admit with candour that soft and partially disintegrated dentine over the pulp may occasionally be permitted to remain, but more teeth have been lost than saved by this treatment.

All decay should be removed from deviating crevices and undercuts. Crevices and undercuts are the secret homes of vibriones, the protococcus dentalis of Schrott, the parisitic fungi which "suck out and destroy the structure, at whose expense they increase and multiply." It would seem these fungus parasites cling to the crevices and undercuts with great

tenacity. Histology presents no good reason for hypersensitiveness in these parts. Schrott observes, "the principal cause of the destruction of teeth must be a parisitic luxuriant vegetable growth." I think the primary cause may be electrolysis. The prize essay that nine years ago gained the Tomes gold medal of the Odontological Society of Great Britain was founded on the destruction of tooth substance by electricity. Subsequent investigations seemed to corroborate the theory.

If electrolysis or fungi is the primary cause, there can be no doubt that parasitic fungi are the worst enemies of the human teeth; and as they flourish in concealed places, it is obvious this important principle should be strictly observed, and decay should be effectually removed from undercuts and crevices.

4. Every angle should be cut out and the part made concave. The fact that when filled teeth fracture the fracture starts from an angle or from a V inequality of the enamel is sufficient reason for the strict observance of this rule.

5. In the formation of cavities for the permanent retention of fillings, all frail walls must be cut away. This rule applies invariably to the molars and bicuspids, but not to the labial, enamel walls of the superior incisors, canines and first bicuspids. This rule of course does not apply to the labial surfaces of the incisors, canines and bicuspids, but to the palatal walls of all teeth. If both labial and palatal walls are about the same strength, remove the palatal walls always; preserve the labial wall, and gain seclusion of the filling from sight. All frail walls in molars should be cut away. Molars practically do the masticating, and frail walls invariably break away.

6. Easy access to every part of the cavity should be obtained; so that the cavity can be thoroughly cleaned and properly filled. Hundreds of dentists fail in a large per cent. of their operations because they disregard this principle; they work in a cramped place and they are ashamed of their work when they have it completed, because it is generally imperfect. Perfect work cannot be done without room. You need not be heroic and destroy too much tooth substance, but use good judgment, and have suitable room to properly manipulate.

7. Every inequality in a cavity should be made concave. This is essential to facilitate the perfect adaptation of a filling.

8. In crowded maxillæ the file should always be used in separating teeth prior to filling proximal cavities. The wedge is good in its place, but should rarely or never be used in a crowded maxilla. The file gives the desired room, and causes much less pain, while a desirable space can seldom be obtained by wedging in such cases; and the space is imperatively necessary for the proper insertion of such fillings.

9. The margins of all cavities should be slightly beveled, or, convexed. This is necessary to properly finish a filling as well as to facilitate filling.

10. In preparing a cavity for filling with adhesive gold, a retaining point or slot should be invariably cut, to securely retain the foundation of the filling. Do not forget this, and waste half-an-hour fatiguing your patient, wasting your gold, losing your temper, and proving yourself anything but a master in your profession, by your frequent failures to "start the filling." A suitable retaining point in the proper part of a cavity will not weaken the tooth, but will be of great advantage in making a better filling than can be made without it, and in less time. We will now consider

PRINCIPLES FOR FILLING TEETH.

1. Suitable instruments for the cavity, and the points in proper order. It is about as useless for a dentist to try to extract a tooth with a pick-axe handle, as to attempt to fill a tooth *properly* by unadapted instruments. The best operators use few instruments. The longer a dentist is in active practice the more he is convinced there is no necessity for a large number of instruments. Have few instruments; good forms; well serrated and nicely tempered. Examine your plugger serrations with a common microscope. If one point leans to the right, and another to the left, while a third is straight, it is obvious that such a plugger would destroy any filling. In using such a plugger you can feel it hang back as you attempt to remove it after condensing a piece of gold. Have the points in good order. To tell you what points to use in different cavities can be demonstrated, but cannot be written.

2. Invariably securely fasten the first piece of gold. I am not in favor of any system of filling teeth that *blocks* the first piece of gold. It is obvious small concavities in every cavity must remain unfilled by such a method. Do not blind yourself by blocking a huge cylinder or block into a cavity. Go to work systematically, and see what you are doing, and *know* your filling is *perfect*.

3. Invariably weld each additional piece of gold. This is very easily done. In order to do it, however, care is necessary to keep the filling from moisture. Spunk and the rubber dam make this a comparatively easy matter. The discoverer of the "rubber dam," deserves much credit for his discovery, and the man, whoever he may be, who has enabled us to face wet mouths with spunk, to my mind, deserves as much.

4. In all cavities keep the margins higher than the centre of the filling until completed. This has a double object. In approximal cavities it is impossible, and in all other cavities difficult, to properly fill neat

the margins *after the centre of the filling is completed*, and by filling the centre of the cavity lastly, if the filling can be condensed at all, it is laterally, making a tighter filling.

5. Make the filling as dense as the structure and condition of the tooth will admit. In other words do not attempt to make a filling on the proximal surface of an incisor, as solid as you can possible make it; *it is unnecessary*. Exercise good judgment; put such a filling in the crown of a molar, where it is needed. Many an incisor, that otherwise was a beautiful tooth, has been cracked by such stupidness, and the freqnent result is subsequent loss of a portion of the tooth that cracks off, and generally the loss of the filling. If ever good judgment was called for, it is on this point, and it is singular the subject has attracted little or no attention.

6. Finish the filling smoothly, even with the margins. Because diamonds are found uncut, and native gold is unburnished, it is no reason art should imitate nature, and leave a filling just as rough as possible.

Nicely finished fillings are certainly conducive to the better preservation of the teeth, and should your patient exhibit your work, it would bea upon its face evidence of your skill and good taste.

Thus I have briefly commented upon the principles of filling teeth. The principles apply alike to filling with any material, although I have confined my remarks to gold filling. I am conscious much more can be said which has been omitted, and part I have said is open to debate. I regret I am unable to be present with you. I invite free and critical debate upon my paper, and request you to spare neither the paper or its author, that the profession may be edified and the "essential principles of filling teeth" better understood.

FANG FILLING AND CAPPING PULPS.

By A. C. Stone, M.D, L.D.S., London, Ontario.

As a great variety of substances are used for the purpose of fang filling and capping nerves, and numerous modes of treatment are recommended, a little more light on the subject will do no harm, as we all have our pet method of practice in these cases. I will simply say what mine is and my reasons for following it. We will premise that we have the fangs and pulp cavity perfectly free from all dead nerve and decay, and in good condition for filling: place on a piece of glass a quantity of asbestos, and saturate it with creosote or carbolic acid; dry the fangs and pulp cavity then with a whalebone or other plugger; fill the fangs and about half of

the pulp cavity with the prepared asbestos; a long pellet of gold is then introduced into the tooth and pressed into the pulp cavity, acting as a force pump to push the asbestos and creosote into the fangs, following the first pellet with other large ones, until the pulp cavity is full.

Asbestos is a mineral of the talc family, incombustible and indestructible, and will retain the creosote much longer than cotton or silk. Cotton, if left in the fang after the creosote has evaporated or been absorbed, will, if any moisture reaches it from the apex of the fang, decompose like any other vegetable substance and produce gases that must find vent some way or other. We are often obliged (more particularly in country practice) to fill teeth affected with alveolar abscess without any chance of previous treatment. I find, in many cases of this kind, that, after cleaning out and enlarging the nerve canals and filling with asbestos and creosote, that the teeth remain useful for many years, and in some instances are entirely restored to health. One tooth saved is worth ten artificial ones inserted. There is no good reason why one copious supply of creosote, applied to the root canals and hermetrically sealed there, should not produce the same effects as a dozen ones that are exposed to the triturating action of the saliva. The asbestos absorbs and carries with it into the roots a large quantity of creosote, which is gradually given off to the fangs. So much for fang filling.

I now come to the capping of exposed, or nearly exposed, nerves. After excavating and removing all decay, I drill retaining points on each side of the nerve; I place, with the point of an instrument, a sufficient quantity of asbestos and creosote over the exposed nerve; I then pack gold in all the retaining points around the nerve; then, with a large piece of heavy foil folded so as to represent No. 160, placed so that its outer edges shall cover all the retaining points to which it must be packed, taking care not to press on the centre over the nerve until two or more pieces similar to the first are securely packed around the edges, then, with a large plugger, press the center upon the asbestos; the cap or bridge will then be strong enough to bear all subsequent pressure required in filling the rest of the cavity.

The asbestos is a perfect non-conductor, and the creosote has not that irritating effect that the oxychloride of zinc has upon the nerve and its surroundings.

DIAGNOSING TUMOURS OF THE ANTRUM.

BY CHARLES A. MONDELET, L.D.S., OTTAWA.

An anatomical examination of the antrum of Highmore presents different degrees of thickness in its walls; tumours project one or another

of these weaker surfaces. Thus, often the first intimation of a tumour is a scarcely noticeable loss of symmetry in the part.

The thinnest wall or surface of the antrum is found commonly immediately over the canine fossa, and deserves, for this reason, a first examination. If a tumour exists this part will generally be found projected, and which projection, as the tumour enlarges, grows more and more plain. If, however, this point seems normal, let attention be directed to the second weak wall—the floor of the orbit. This may be found projected; if so, the eye will stand more prominent than its fellows. The third weak surface is the wall of the nasal fossa. The fourth, what might be termed its pharyngeal surface. If a careful examination of these four points discovers no unnatural features, it may be premised that no tumour exists, at least, in a very advanced stage of development.

PREVENTION OF ACCIDENTS FROM EXPLODING VULCANIZERS AND RETORTS.

BY W. SAUNDERS, D.D.S., New York.

Reading frequently of accidents resulting to dentists and their assistants, from the bursting of the glass retorts used in boiling nitrate of ammonia, it occurred to me that probably some might not have thought of a very simple plan I first adopted with my vulcanizers and then used for my ammonia flasks. The explosion of a Whitney vulcanizer, and the indiscriminate scattering of its contents around my head, suggested to me, ten years ago, a simple four-sided box of cast iron, quarter of an inch thick, open at the top, and the four pieces riveted together, though not closely, by bands of iron. This is fastened to my bench, and if another similar explosion does occur, I know the ceiling will suffer, but I trust my body will escape.

Now, the very first time I used the gas, I burst a retort and burned my hand, and made a mess of my ammonia, which ran over the floor. I didn't boil a second time until I had erected a three-sided box, similar to that used in England, made of wood, lined with tin or zinc, and having a good thick porcelain dish at the bottom to catch the ammonia if the retort should burst. The lower half of the open side has a door which closes and keeps a passing draft of air from the flame of the lamp, and does not prevent you watching the process of boiling and regulating the flame.

Retorts are broken by generating the gas too quick, and causing a greater condensation than the frail glass can stand. Also by passing suddenly, opening a door, perhaps, up or down stairs, which sends a current of air into the laboratory; but I think too rapid generation of gas is the most common cause.

PROCEEDINGS OF DENTAL SOCIETIES.

DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

A large meeting of the Licentiates of the Province of Quebec, incorporated under the above name, was held in Montreal, at the Mechanics' Hall, on Tuesday, 19th September, to elect a new Board of Examiners, &c.

The following were elected the board for the next two years: A. Bernard, W. G. Beers, C. Brewster, J. McKee, H. D. Ross, J. H. Webster, T. A. Venner, L. J. B. Leblanc, P. Baillargeon, J. A. Bazin, C. F. F. Trestler.

The Report of the Secretary was read. In the unavoidable absence of the Treasurer, it was decided that a printed sheet be furnished to each Licentiate, showing the state of the funds.

The following motion was carried unanimously. Moved by J. H. Webster, seconded by L. Globensky, "That the Board be requested to take such measures for abolishing Dental show cases, and all such unprofessional signs as it may deem fit." Dr. Webster explained that in a branch office of his, conducted by Mr. Nichols, he was compelled in self-defence to make use of the show-case, as a neighboring Dentist used one; that he had tried the experiment of doing without one, and found many of his patients made a mistake and got into the wrong office; and that he deeply regretted the degradation of having such a semblance of quackery at his door. At his own office he did not use it, and would gladly welcome any action to put a stop to them. He thought the Board had power to do it. Other members who used them stated that they had offered to withdraw them, but the party referred to by Dr. Webster had broken his promise. It was decided to take action at the next Board meeting.

It was decided by unanimous vote to petition for certain amendments to the act of Incorporation, to provide for a reduction in the number of the board to seven members; for but one meeting a year; for power to grant the degree of doctor of Dental Surgery to *Licentiates* who produce certified tickets of attendance on at least one full course of Anatomy, Physiology, and Chemistry in a recognized Medical school, or one full course in any recognized dental college, and upon passing a special examination in theoretical and practical dentistry; also for the repeal of the clause exempting graduates of Dental colleges from the provisions of the Act; the said exemption not having been inserted as the wish of the profession, but introduced after the bill went to the Legislature. While this clause has been prejudicial to the influence of the Board, and unfair

towards those who have obtained their license, it also debars the graduates from a voice in the election of the Board, and from actual fellowship; although they have the privilege of obtaining the License on payment of the fee.

An application is to be made also, to exempt Licentiates from service on Juries, and to grant them compensation for loss of time occasioned by their retention as witnesses, and to confer on them all the rights and privileges conferred upon physicians.

After an able address from the President, Dr. Bernard, the meeting adjourned.

BOARD OF TRUSTEES AND EXAMINERS, PROVINCE OF QUEBEC.

A meeting of the newly-elected Board was held immediately after the close of the meeting of Licentiates, and the following were elected office-bearers:

A. Bernard, President; W. G. Beers, Secretary; C. Brewster, Treasurer; L. J. B. Leblanc, Registrar.

It was resolved to hold the next meeting for examinations, &c., in Quebec city in November.

SELECTED ARTICLES.

DENTISTRY *vs.* MONEY.

BY R. S. WELLS.

Read before the Wisconsin State Dental Society, July 12, 1871.

That "self protection is the first law of our being," is the universal voice of reason, and "if any provide not for his own, and especially for those of his own house, he hath denied the faith, and is worse than an infidel," is the word of inspiration, each agreeing to the same truth.

To provide for professional wants, and to protect our mutual interests, is the object of our gathering in associate capacity to-day.

I have chosen my theme, "Dentistry *vs.* Money," or "Values in Dentistry," for the following reason:

Subjects pertaining to the *acquirement* of professional knowledge and skill, are the themes almost exclusively dwelt upon by our writers and public teachers.

I would not underrate these themes, for it is of the first importance that we *have* skill and knowledge, but it is essential also, that we know how to *use* them. A defective bolt may destroy the efficiency of the most per-

feet engine, and so may a misconception of business principles applied to skill and knowlege, render them unproductive of pecuniary reward.

In adopting this, our chosen calling, without doubt, the monetary idea was the principle one with us all, then why pass it by in our public deliberations, with such silent indifference, while in our private meditations, it claims so large a share of our thoughts.

Yankees worship success, and especially devout are they, at the golden shrine of pecuniary success. "The surest way to be a success, is to succeed," say they. Morals in *methods* are ignored. Let us not fall in with this pernicious doctrine, but use only right and honorable means of advancing our prosperity.

When I see a pecuniarily successful dentist, I want to "button-hole" and learn from him the secret of it

We are in the habit of hearing this statement in answer to our inquiries on this point: "The skillful will *always* succeed. But the question arises, How about opportunity?

If they mean by skill, ability to take advantage of circumstances, or to make opportunity, I grant it, for it is the secret of all success.

"Fortune is a lazy goddess,
She will never come to you."

But if they mean mere professional knowledge and skill, I deny it, for it is well known, that the amount of money a man may have is not always in the ratio of his ability. Circumstances may favor one and not another. Look, for illustration, at Goodyear and Bacon. The former had inventive talents of the highest order, which is producing a rich pecuniary harvest; but he sowed, while Josiah reaps, and we are his golden sheaves.

A merchant with sufficient capital and ability, to buy advantageously, and sell cheaply, and with a good market—the main conditions of success—may utterly fail, because he neglects other conditions, minor in themselves, in not securing a good location for trade, or in not advertising properly.

I do not counsel greater greed for gain, but better methods for obtaining it.

There are certain conditions to be met in all kinds of business, and a proper understanding of those pertaining to our specialty, is of interest to us all.

All legitimate and honorable business is founded on the principle of reciprocity, or value returned for value received.

A man must have an article of value to exchange for other values, and then must find or *make* a market for it to succeed. I say make a market,

for to create a demand for his article may require business skill of the highest order; but this will be considered more fully under the head of advertising.

What is value? "Value consists in use."

Says an eminent writer on National Economy, "It is that property or those properties which render anything useful. They are valuable because they are useful. A reaper is valuable for its useful qualities, The same is true of ornaments, they are valuable because they are useful for ornamental purposes." The same is true of knowledge, it is valuable because it is useful to alleviate suffering, shield us from danger, and add to our happiness.

So of everything necessary to the support and comfort of man. They are valuable because of their useful qualities.

Now, what have we of value to exchange for money? The first thing I will mention is

SKILL.

When your skill puts into a person's mouth a thing of beauty, more valuable for ornamentation than the costliest diamond, that rejuvinates the fading charms of the waning beauty more than the most costly toilet, that removes facial deformity as no other art however costly, or surgical device however expensive can, that gives more gustatory pleasure than the most luxurious viands that adds to the length of the days of the invalid, by aiding nature in her work of digestion, as nothing else does, then for *such* a product of skill, to charge no more than a blacksmith receives for the same amount of time expended on your horse, looks, certainly, as though you thought your product had no more value than his. Suppose, if you find a diamond by an hour's search, is that a reason why you should sell it for the price of an hour's wages?

A man is suffering the pangs of toothache, by your skill you relieve him in an hour, or it may be in a minute, shall you therefore be compensated only for an hour's or a minute's time at day laborers' wages? Clearly not. The less the time, the more to pay. There is sometimes, not always, a realization of this idea in surgical dentistry, but when we look at mechanical dentistry, as it is commonly called, how false are the views of many; they change as though they were mere mechanics, and the result is, the public take them at their own estimates of themselves, and their own operation show sooner or later, the bad effect of this low standard. A man is never up to his ideal, but always below it, therefore correct ideas are all important on this, as well as on other subjects, to make our practice right.

KNOWLEDGE.

The next thing we will consider, is the value of dental knowledge. Any respectable attorney will charge a fee of from ten to fifty dollars for an ordinary case. This retainer is a prepayment for the legal knowledge he expects to impart.

If he pleads in any court for you, this service will call for an additional fee. In fact, his fees are mainly for legal knowledge imparted, and so it is with the medical profession. They no longer furnish medicines of value, but charge for medical knowledge mainly. But how about the dentist. Shall he furnish advice that will save priceless gems for future beauty and usefulness, and receive no compensation for that knowledge? It has cost him much in time and money for its acquirement, not only the first investment for tuition, but for the experience of after years, which comes through study and experiments. He must spend no small amount of time in the investigation of new facts and theories to keep pace with the rapid strides of our vigorous young profession.

A wealthy patron of an artist, once complained to him of charging what appeared to be a large sum for ten days work. The artist replied, "It took me ten years to learn to paint that picture in ten days."

SYMPATHY AND PATIENCE.

Shall we receive a compensation in money for these, asks some of you. Why not? Who of you do not know by experience how completely his whole body may be drained of its nervous forces, by a demand at the chair for a few hours for sympathy and patience, by a young or refractory patient, yet low valuable is it to them, and to all in hours of distress. A visit to a dentist for the first time, is a great event to many. The most who come to us are in pain, or at least are suffering from a nervous dread of our operations; kind words and gentle manners are appreciated then as at no other time. If you are harsh and unfeeling or impatient, you repel them from you, but if you show a delicacy of feeling for their fears, and have soothing words for their suffering, and are patient with them in their fretful and often unreasonable moods, they will treasure up a kind remembrance of you, which will go far toward removing disagreeable sensations they experience at your hands, and which you may turn into gold. More than once have I known patients leaving a skilled but harsh operator, to employ one of less skill, but of known gentleness and kindness.

CHEERFULNESS.

This, too, has its value; for many a heavy heart is carried into your presence, which a cheerful, grateful word will help to lighten. You need

not be frivolous or boisterous, but a well stored mind can gently lead the troubled one to other objects than self for contemplation, and thus may you rob your office of half its terrors.

Let nothing in the display of instruments, anatomical preparations, or in your conversation suggest sombre thoughts, but rather let pictures, books, and flowers direct the mind, with your help, to something to think of, rather than its present fears.

This quality, then, has especial value to you, because of its peculiar usefulness.

A GOOD ADDRESS.

By this is meant the ability to say the right thing at the right time and place. It is an outgrowth of refinement; however, a person may be truly refined in feeling, and yet lack the ability to express his thoughts skillfully. This is a thing for cultivation You have golden opportunities, while a patient is under your care for treatment, to impress them with the importance of dental surgery and hygiene.

That there is a vast amount of ignorance in the teachings of our science, we well know from daily experience; is it not, therefore, a duty we owe the public, and especially our patrons, to enlighten them? Will we not be public benefactors, if we induce them to take the ounce of prevention rather than the pound of cure?

With the class who *intend* to take proper care of their dental organs, there are probably more teeth annually lost from neglect than are saved by timely operations. If this is true of those who are comparatively enlightened, what shall we say of the masses who never think or care for these things. Could we secure this last named class for our patrons, our business would vastly increase, besides we would confer lasting benefits on them.

NEATNESS.

What! Coin this into money?

If it is useful in supplying a want, it is valuable.

This is a day of judging by appearances; therefore, appearances can not be neglected.

To use a common phrase, there is money in it. Be scrupulously neat, not only for appearance sake, but for the *virtue* there is in it. Let no odors escape from your breath, your hands or your office, else a suspicion is excited against you in the minds. of the refined that will tell against your pocket.

A common maxim is, "Dress bespeaks the man." The discriminating judge, and tha trightly, that he who is slovenly in his habits will be slovenly in his operations.

A dentist whose office is furnished neatly, or even elegantly, can get larger fees than he can for the same service rendered in dirty, shabby rooms.

Let books, pictures, flowers and works of art, adorn your office, and it will attract the refined classes to you. The shoddy van are attracted by mere appearances, while the crowd follow when these two classes lead.

ARTISTIC TASTE.

By artistic taste is meant that which pertains to the skillful use of form, proportion, beauty, curvature and color.

It is the outgrowth of culture.

The mechanic works by fixed rules, does as he is taught, and the product of his hands is mechanical. In other days, a branch of our business was called, and that rightly, *mechanical dentistry*. Some have not outgrown the idea yet, and are still mechanics, content to work for mechanics' wages. They have no idea of anything going into the product of their hands, higher than mere labor. Agents who have visited every office in the country, report that this class, in some sections, have been obliged to clip expenses, here and there, to make their ends meet, till they are far poorer than ordinary mechanics about them. They have talked "cheap dentistry," *till they have created a demand* for it, and they have also in some instances secured a reputation. Such a reputation, of being CHEAP DENTISTS, with its necessary concomitant poverty, to bless them for their wisdom all their days.

But there is another class who understand wherein their *true* interest s, and have taken a different course. They have cultivated the artistic spirit by long years of study, till they are enabled to breathe that spirit into all they do. Dead blocks of porcelain, by their touch are things of life and beauty, rivaling nature in graceful curves, delicate colors, beautiful forms, and nice proportions. The refined and cultivated appreciate this, and are willing to pay for it. This class make or unmake our reputations. They with all sensible persons are suspicious of a professedly good article, that is cheap, for fear it has no value.

It is optional with each whether he will bring an artistic product to a good appreciative market, or a cheap mechanical product to a poor market.

ADVERTISING.

This subject does not properly belong to my theme, but being collateral to it, and intimately connected with our own interest, I choose to say a few words on its use.

What colossal fortunes are made by the skilful use of the press. In

fact, it is the main element of success with the quack. He blows his brazen trumpet loud and long till the credulous flock to be fleeced. It seems to me that *this is an element worth redeeming from the vicious uses of empiricism.*

If the press enables worthless things to bring such rich pecuniary harvests, should there be any hesitancy in using it to proclaim the merits or make a market for a good thing? There needs to be wisdom used in this as in other things. Mere puffing is of doubtful expediency, but the most fastidious on this subject can not object to the enlightening of the masses on subjects pertaining to our specialty, and to teach them wherein is their highest interest, for their interests are identical with ours in this matter.

Let me suggest that this society offer a prize for the best written tract, or tracts or books, on subjects pertaining to the care and preservation of the teeth; let the matter be put into the hands of a committee to report at the next meeting of the society, and if they are adapted to the public want, let them be printed under the auspices of this society. Can it engage in a better work? Will it not do more to regulate the practice of dentistry than the best devised laws? Give the public the means of discriminating between the good and bad, and their interests will lead them to the man that will give them the most value for their money.—*Register.*

ON FILLING INTERSTITIAL CAVITIES IN MOLARS AND BICUSPIDS WITH GOLD.

BY MORDAUNT STEVENS, M.R.C.S.E., L.D.S., D.D.S., HOUSE-SURGEON TO THE DENTAL HOSPITAL.

How to obtain *easy access* to distal cavities in molars and bicuspids, has until lately been a puzzle to me. The text-books tell us to chisel from the *masticating surface* of the tooth till we can obtain a good view of the cavity, and, after excavating, we are directed to pack our gold against the cervical wall, finishing at the masticating surface. Most operators follow this plan, but the labour is immense—for instance, in filling up the first upper molar the operator is doubled up, so to say, having to keep his head down at the imminent risk in this hot weather of an apoplectic fit. Besides position, the objections to this method are manifold; you chisel away an immense proportion of the tooth, cutting away the most important wall, the masticating one, so that suppose you use non-adhesive gold you always find a difficulty in packing the last pieces.

Other practitioners cut away the disto-buccal angle, and fill the cavity from the inside; I have seen this beautifully done, but to say the least

it is very difficult, and about the hardest work for a guinea a man can do; the same may be said of the plan of breaking down the masticating wall. In all these cases the patient has to keep his or her mouth wide open—no slight task, considering the length of time these fillings take.

Some little time ago I hit upon a plan accidentally, which I have followed ever since. Suppose, *e.g.*, I were going to fill an average cavity at the back of the first upper molar, I would with a sharp chisel (and how difficult it is to find a *good sharp* chisel) cut away as much of the disto-buccal angle of the tooth as would enable me to see the cavity; then, after shaping with hoe excavators, I would pack my gold (non-adhesive) with *foot-pluggers* against the palatal wall, finishing at the buccal wall instead of beginning at the cervical wall and ending at the masticating surface.

If I am filling on the right side of the mouth I turn the patient's head away from me and stand on the right, and *vice versâ*. I will enumerate in a few words the advantages of this system.

1st. You stand almost, if not quite, upright.

2ndly. The patient can shut his or her mouth, if you use the rubber dam, and thus allow you to draw the corner of the mouth further back.

3rdly. You obtain a good view of the cavity.

4thly. You chisel away less of the tooth than you would if you followed any other plan.

In filling distal or central cavities in the bicuspids, I wedge with hickory or cotton wool; if time enough is not allowed for this, I chisel in the same manner as described for the molars, but with far more circumspection, very little is sufficient, and fill in the same direction.

Of course, in some cases this plan is not admissible; for instance, when all the masticating wall is gone. In these cases I should use adhesive, preferring Morgan's sponge gold. Likewise, when the cavity is very close to the palatal surface of the tooth we have no alternative except filling from the inside. I cut up my gold in *points*; these are made by rolling up a sheet of No. 4 non-adhesive into a rope, and cutting it first obliquely, then straight across in lengths, so that each piece is triangular, having a broad base, long sides, and a sharp apex. The best way to prepare these points is to roll up some sheets of No. 4 (Abbey's) loosely into ropes, so as to make soft points to start with; the finishing points are best made of No. 4 (Ash's) rolled up tightly. This plan of cutting up gold was first shown me by my friend, Dr. Gregory, of Paris. With the help of these points, plugging forceps (foil carriers) and a set of pluggers Messrs. Ash have made for me, I find that I can introduce fillings with greater satisfaction than by any other system.

A large soft point is first taken up with the forceps and inserted, with the apex foremost, into the cavity; it is then *forced* with a *foot-plugger* against the palatal wall, the other points are then inserted in the same manner, and, if possible, the mallet is used; a good hold should be left for the last piece, unless adhesive is used to finish off with; thus, every piece being well compressed, &c., I avoid using the wedge, an instrument I have now completely discarded.

To conclude, I will add that every man has his own ideas on this very important subject (gold filling), and it would be a great boon if every practitioner who has found some way of lightening his toil would communicate his idea to the profession through the Journal, thus opening a wide and instructive field for discussion.—*British Journal Dental Science.*

TEETH PARASITES. SUGAR AND THE TEETH.

Since my last on the above subjects, which appeared in your issue for June, I have increased the power of my microscope from 250 disc to, I should judge to be, from 450 disc to 500 disc (but not having a stage micrometer I cannot state the exact power used with certainty), but can find no trace whatever of organic life. The matter examined was from the mouth of a person who does not make use of the tooth-brush more than once in the day, taken from between the first and the second of the inferior molars. But, from the following statement of Dr. J. H. Bowditch, of the United States, it would appear that organic life must be found in the matter taken from between the teeth, and goes to prove that the extract which I gave in your issue for June would appear to be correct: "Having examined with a microscope matter deposited on the teeth and gums of more than forty individuals, selected from different classes of society and in every variety of bodily condition, in nearly every case he discovered animal and vegetable parasites in great numbers, in fact, that only persons whose mouths were found to be entirely free from those parasites cleaned their teeth four times daily, using soap once. Among the various agents applied were tobacco juice and smoke, which do not impair the vitality of the parasites, nor does chlorine, teeth-wash, pulverised bark, soda, ammonia, &c.; however, pure white soap destroys the parasites naturally."

As I have not met with a good explanation of the action of "Sugar on the Teeth," I thought the following might prove interesting to the readers of the "British Journal of Dental Science:"

"M. Larez, of France, has proved that sugar from either cane or beet is injurious to healthy teeth either by immediate contact with them or by

the gas developed, owing to its stoppage in the stomach. If a tooth is macerated in a saturated solution of sugar it becomes gelatinous and its enamel opaque, spongy, and easily broken. This modification is due not to free acid, but to a tendency of sugar to combine with the calcareous basis of the teeth."—F. GRAHAM YOUNG, 7, Park St., Bristol, England.

CASE OF NECROSIS OF LOWER JAW FROM MERCURIAL SALIVATION.

Under the care of Dr. T. A. McGRAW, Professor of Surgery in Detroit Medical College.

Thomas McGlochlin came under my care at St. Mary's Hospital on March 29th, 1870. Six years before he had been treated for syphilis, and badly salivated, had since then been well until the middle of March, when he caught a severe cold, and was seized with chills, fever, headache and coryza. He consulted a physician who ordered some powders, which he believes to have been composed of calomel. The quantity contained in each powder is unknown. After taking three or four his gums began to get very sore, his breath fœtid and his teeth loose. He, notwithstanding, continued their use according to orders, until he became alarmed.

On examination, I found him presenting every symptom of mercurial salivation in a very high degree. The peculiar odor, the ulcerated cheeks and swollen and bleeding gums, the profuse secretion of saliva, and the teeth dropping from their sockets, as well as the very positive history of the case, left no doubts regarding the diagnosis. Already when he came under my charge, had the lower jaw bone become seriously diseased. Sinuses, discharging pus, led to bone, bare of periosteum.

Chlorate of potash, in ten grain doses, was given every hour. His strength, which had begun to fail, was kept up by concentrated nourishment, given frequently in small quantities, and moderate doses of morphine served to relieve pain and produce rest. The local symptoms rapidly subsided. The swelling diminished, pain disappeared, the breath, though still fœtid, lost somewhat of its offensive character.

On April 12th, the necrosed bone seemed ready for extraction. The patient was brought before the class of the Detroit Medical College, and by forceps and fingers, more than half of the lower jaw was removed. The specimen is now in the College Museum, and represents that portion of the jaw included between the right condyle and a point half-an-inch to the left of the symphysis.

The patient did well, and left the hospital free from all disease and in tolerable strength. Sufficient time had not elapsed, however, on his departure to determine whether regeneration of the bone would occur,

nor have I been able to learn of his condition since, but it is remarkable that scarcely any deformity resulted from the loss of bone. The jaw seemed to retain its contour, and showed no tendency to fall in.—*Detroit Review of Medicine and Pharmacy.*

MOULDING SAND.

By A. H. Young.

A great improvement to the ordinary moulding sand will be found in the addition of from 36 to 60 per cent. (according to the nature of the sand used) of finely-powdered bath brick, which may easily be obtained by rubbing two bricks together. I have used it for some time in my workroom, and find that I can, by virtue of its *cohesive* and compact nature, uniformly obtain clearer and sharper impressions, the castings having a smoother surface than with the common moulding sand.—*British Journal of Dental Science.*

BIBLIOGRAPHICAL NOTICES.

Taking Impressions of the Mouth. By James W. White. Philadelphia: published by Samuel S. White, 1871. 27 pages. With a chapter from Harris's on "Porcelain Teeth," making in all 75 pages Illustrated.

A plain, practical essay on taking impressions of the mouth with wax, gutta percha, and plaster of Paris. The author truly says, "Without a correct impression of the mouth to begin with, no subsequent care can secure a good result, no matter of what material the base may be composed."

Transactions of the 7th Annual Session of the Illinois State Dental Society, held at Peoria, Illinois, May 9, 1861.

This publication of 146 pages does infinite credit to the Society, and we must again thank the secretary, Dr. C. S. Smith, for his courtesy in sending us a copy. We would like to give a more extended notice of these transactions, as they are certainly very deserving, and the spirited action of the Society in publishing them in book form very praiseworthy. By special permission we publish one of the essays in the present number.

The Teeth and how to Save Them. By L. P. Meredith, M.D., D.D.S. Published by J. B. Lippincott & Co., Philadelphia, 1871. 16mo. Illustrated. 271 pages. Cloth, $1.25

The author of this volume has essayed to produce a popular work on dentistry for common reading; and has, to our mind, succeeded as well as might be expected. It would be impossible to expect that a work of this kind would be devoid of some faults, and it would be most unfair to condemn it because certain portions are not quite up to the high standard of thought and practice. The matter is very simply written, makes no pretensions to originality, is just what the people need, and what every dentist ought to possess, for, although not aiming to become a dental text-book, any dental work, honestly written, ought to be encouraged.

The chapters on quackery, advertising, charges, and warranties, evince a mind tutored to the observance of the code of ethics, and will do good. These the author might have extended to great advantage, and perhaps omitted some of the earlier chapters, which are less needed.

We would suggest to the publishers the propriety of issuing the work in a cheaper form for general sale.

EDITORIAL.

MATRICULATION EXAMINATION.

When the Committee appointed to draft the frame-work of the "Act Respecting Dentistry" were consulting together, in order to decide upon what would be best for the interests of the Profession generally, they asked the advice and assistance of Dr. Dewar, a member of the Medical Council, and Doctor Berryman, one of the Professors in Victoria College, upon several matters, and among them was the propriety of fixing a Matriculation Examination for Students. It was decided that as dentistry at that time was, so to speak, in a state of chaos, it would be advisable to "make haste slowly," and provide for a strictly dental education first, and after three or four years to fix upon such an examination for matriculants as the Board might see fit and proper under the then existing circumstances. Acting upon that decision, the Board has increased the strictness of the final examinations from year to year until they are now nearly as thorough as need be required. All students who have commenced since January, 1870, are required to attend two full courses of lectures in some recognized dental college.

Nearly four years have passed since the Act came into effect, and it certainly seemed as if the time has arrived when a little more care should

be taken to see that young men whose education is not up to a moderately high standard, should not be allowed to enter on a course of dental studies. It will not be well, we think, to fix too high a standard *at present*, but as the Board most undoubtedly has the power, under the Act, to determine what a man's qualifications shall be, before he can pass his final examination, it follows that it should have the power to fix and determine such a matriculation examination as will compel a person to learn to write the English language with tolerable correctness, before he attempts to learn dentistry.

Our attention has been called to this subject by the low, vulgar and ungrammatical language, of divers and sundry circulars and newspaper articles which have been flying about recently. It is to be hoped that the Board will attend to this matter at its next session so that those who come after us, if they must be so foolish as to publish puffs and challenges, will do it in language which will not bring a blush to the cheek of all respectable dentists, to think that there is such ignorance in the Profession.

C.

THE COUNTRY DENTIST.

In discussing various points of ethics, with reference more particularly to advertising and fees, we feel that we may have omitted to do justice to a large and important class of the profession, whose position "out of town," in a sparsely-settled country like Canada, and among a people so ignorant of Dentistry as the mass of Canadians, is certainly peculiar.

In the very outset of his career in Canada, the country dentist finds himself among farmers who know comparatively more about the care of the mouths of sheep and cows than their own, and among a large class who need dental cuts in the newspapers, and show-cases in the streets to attract their attention to the fact that the "Dentist" attends to the teeth, with something of the same degree of intelligence as the four year older, who requires the illustrated picture book to deepen the impression in his mind of the difference between a wheel-barrow and a spade. The degree of enlightenment is somewhat higher in the cities and large towns; but there still exists for all dentists in Canada a tangible difficulty in overcoming ignorant prejudice and penurious "economy" with regard to the teeth. To this condition of things we may attribute certain breaches of professional ethics by dentists practising out of town, and who might possibly starve if they conformed to rules suitable for the town, and suitable for a population well informed, and fully appreciative of the value of the teeth.

What would be considered eccentricity or carelessness in the matter of dress, for instance, in the city, is simply a matter of custom and comfort out of town; and the gayest dandy is only too glad to throw off his swell toggery and enjoy the release of a rough mufti and a *tout ensemble* to please himself alone. In most other circumstances there is a conventional difference between the city and country, to which most of us conform.

There are moral and professional principles which no circumstance of residence can annul; but it would be drawing too fine a parallel to say, that just as a man should be a Christian in the country as well as the town, so should a dentist be a consistent observer of dental ethics framed mainly by city dentists, or by dentists in larger and more intelligent country communities than we find in Canada, wherever he may happen to reside. The parallel is not fairly drawn. The one is a question of moral principle and life, as indelible as the very heavens, to be cherished regardless of cost: the other a point of honor, but still a point of existence,—and human nature may die for a principle involving a theology, but will not tolerate rules of etiquette which involve its sure starvation. Debt and family responsibility are rare casuists, and we assume that the men who profess a readiness to perish rather than break a rule of professional etiquette are pretty well convinced beforehand that they will never have the chance to be tried.

In codes of dental ethics there are generally, first principles of good manners laid down which we do not think are at all unnecessarily detailed, and which certainly ought to be instinctive and innate with dentists in every sphere. Kindness, firmness, patience, willingness to explain mysterious points of practice, and ability to do so, are circumstances of timely education, and if a code of ethics can instil a condition of character, so much the more credit to the code. But in regard to the matter of advertising and fees, we must do justice to the circumstances of the country dentist in Canada. While we hold that the city dentist has no excuse for resorting to hand-bills, posters, and other forms of advertising than the ordinary card, there are fair reasons for excusing the country dentist, in Canada at least, should he feel it necessary to do so; and yet there is no excuse on the other hand, for the country dentist who makes use of these means to call attention to the lowness of his fees, his special modes of operating, or his superiority over neighboring practitioners. It must be remembered that the country people in Canada are difficult to reach; that they do not all take newspapers; that they are more zealous of the time necessary to be devoted to good operations, have expenses of board and lodging in many cases, while remaining to have dental operations completed, and have actually to be coaxed to be educated to care for their teeth.

Many farmers never visit the dentist in his office, but wait for the travelling practitioner, and dental operations are performed in the precarious steadiness of rocking and arm chairs, and under other circumstances prejudicial to success. If the people were better educated in dentistry they would never encourage the travelling dentist who goes from house to house to solicit or perform operations. They expect their teeth can be repaired like tin kettles, and class the dentist with the gipsy and peddler. Had travelling dentistry been in the hands of honest men, much good in educating the people on dental matters might have been accomplished; but it has served to deepen prejudice because so much in the hands of dishonest men. These facts show the difficulties to be met by the country dentist of to-day: that he has to pave the way for practice in most cases by a previous education of his patients.

In this light, of the country dentist doing his best intelligently and honestly, we see the necessity for some travelling dentistry at present, but no more excuse for quackery on the country road than quackery on Notre Dame street. We see, too, the actual necessity for modest hand-bills and posters, and advertisements in the newspapers, but again, let us reiterate, no reason at all for bombastic egotism and absurd pretention. We have no more defence for dental cuts and show-cases for the country dentist than for his *confrère* of the city; and while regretting that the state of dental education among the people is so low as to necessitate the same means of calling their attention to the presence of a dentist as the visit of a circus, we have faith that better days will come, and that Canadian farmers and village residents will welcome the appearance of the honest dentist among them, and will not require persuasion to have attention paid to their teeth.

Let country dentists frown down such intolerable conceits and high-flown quackery as we still see in the advertisements of some practitioners, and avoid imitating a bad example, even if it be imported from the town

With reference to fees, the country dentist ought to operate for lower fees than city dentists, because his expenses are much lower: but on the other hand, if he can render equally good, and as many can, *superior*, work to the large majority of dentists in cities, we do not see why any circumstance of residence should make him lower his fees. We know some dentists practising in country districts of Canada, who demand higher fees than practitioners in some of our large cities, and others who attracted patients to them from a distance by their superior skill, and who were paid much higher fees than the large majority of city dentists could have obtained for similar services in town. Such appreciation is the

exception, not the rule, in Canada; but it is well to chronicle these facts, as indicative of what can be done by skill in practice, and dignity in demanding fair remuneration. Patients going to town have the expenses of board, &c., in addition to higher fees to pay, and run the risk of getting into the "Dental Slaughter Houses" to be found in most cities. Those are indisputable facts which should stimulate country dentists to aim at excellence. A tooth cannot be filled nor a set made any cheaper in the country than in the city, if honestly done, because where the country dentist has the advantage of smaller expenses, the city dentist has treble the amount to do. In nine cases out of ten the country dentist is a better operator than the same proportion of city dentists. His position conduces to quiet study; his physique and health is superior; his nerves are more under control, and he may, as many do, find a friend and a mutual educator in the village physician, both of whom react on the other, and tend to mutual knowledge and improvement. What kills the country dentist is a want of friendliness with confrères, and an effort to underbid to gain a practice: while there has been some indulgence in personalities, and miserably mean reflections and inuendoes in the papers, discreditable to members of a profession which now ranks in Canada with the leading profesions of the day. Fee bills in Canada for town will not serve for the country, simply because very many of the people would rather lose their teeth, than expend as much for their salvation as they would for their beer, and grudge a professional man a whit more profit than the one who makes their boots. The remedy lies in educating them by means of the press, by publishing reliable information in regard to the teeth, without any advertisement appended; by educating in the office, by doing one's very best conscientiously in every operation, and so winning the respect and confidence of the public.

B.

"YOU MEAN ME!"

In the palmy days of the regime of Napoleon the Third, Victor Hugo made the following capital sarcasm, which can have numerous applications: "When the Paris Police overhear any one using the terms 'ruffian' and 'scoundrel,' they assume you must be speaking of the Emperor."

One of the special missions of this Journal in Canada is to turn the current of thought and action towards a higher professional standing. It has endeavoured steadily, without fear or favor, to maintain principles in accordance with this aim; to encourage every honorable sign of reform and aspiration, however humble or weak, and, with impartial vigilance, to expose the egotistical assumptions and falsehoods of "expositors," and

the arrant imposture of quacks and "gutter dentists." Principles laid down in print have invariably been carried into practice, and even much personal private assistance has been given, to alienate and educate poorly qualified beginners from the dangerous attractions of open quackery. However, there are always barnacles as well as birds, and you cannot make a bird of a barnacle by giving it wings. It is just as natural for some men to be superficial and dishonest, as for barnacles to cling to a ship's bottom, and birds to play on its masts. The great aim must be to force such natures to turn their attention to some other sphere of labor where they can do less harm. In this age it seems that there must be a proportion of every population to fill the prisons, and the happiness of society would be greatly enhanced if dental quacks were less lucky in escaping their natural home. Any assistance this journal can give them, in facilitating their speedy conveyance thither, will be afforded most cheerfully and without cost.

We are very happy to learn that by remarks made in this journal upon show cases, soliciting patients, and all such demeaning ways and means of obtaining practice, we have succeeded in making the lives of some notorious quacks miserable. For three years attempts were made to coerce them into honesty, but, in spite of the proverb, dishonesty was *their* best policy, because it was the best paying policy, and that is the extent of their philosophy. Conciliation with quacks and Fenians is "played out," and we are as strong advocates for pillorying and punishing the one as for bayoneting and hanging the other; and when we use the terms "ruffian" and "scoundrel" *we do mean them.*

It is amusing, however, to find others appropriating these remarks to themselves, and fitting caps to their heads which were never designed for them. But just as truly as some can get well fitted with a ready-made coat instead of leaving their measure, so remarks made in a general way, will here and there find a bosom to nurse them; and it would be a sad pity for preachers if it were not so. We do not care one whit whether or not we lose subscribers by alluding to matters which to them may be disagreeably true. When this journal has to lose its independence we will print its obituary. The history of dental reform in Canada will only be a repetition of the history of dental reform elsewhere, and we calculated in beginning this journal to tread on tender toes and rub some backs against the grain. Dentists of common sense and honor in Canada, must see that unless we assume a state of perfection never yet assumed by respectable dentists elsewhere, reform must necessarily break down old barriers, and ruffle the tranquillity of minds, by abolishing unprofessional customs that may have almost become an integral part of our existence. B.

UNPROFESSIONAL SIGNS.--A LEGAL OPINION.

We have always held that the Board of Examiners, both in Quebec and Ontario, were invested with power to actually prohibit some unprofessional signs.

Before receiving the license the candidate makes an affidavit before a justice of the peace, that, "if granted a certificate to practice dentistry, I will truly and honestly demean myself in the practise of the said profession," and Section 14 of the Act of Incorporation gives the Board power to cancel the license of any licentiate who has been guilty of acts "detrimental to the interests of the profession." The following legal opinion on the subject will be read with interest; and we wish forcibly to impress upon one or two who sneer at the Board of this Province that, if the Board takes up any point against them, they may rely upon most thorough exposure of the shameful imposture systematically practised in their offices from day to day:

Montreal, September, 1871.

DEAR SIR,—With reference to the question submitted to me, as to the use of "show-cases" in your profession being illegal, I beg to state the following:

The Act, 32 Vic., chap. 69, gives the Dental Association of this Province, the *sole* power of *licensing* Dentists for Quebec.

Section 15, allows the Board certain powers to make rules and regulations for the proper working of the profession.

Under section 17 any Dentist disobeying the rules, so made, forfeits his license.

It reads as follows: "When the Board shall be satisfied that he has been guilty of acts *detrimental to the interests* of the profession, he shall forfeit his certificate and title, and it shall be cancelled." The only question, therefore, is, would your Board pass a resolution to the effect that the use of show-cases is detrimental to the interests of the profession? If so, the whole case is in a nut-shell. The Board takes no civil action against the Dentist who refuses to comply in order to deprive him of his license, but simply notifies him of his illegally using the said cases, and forwards him a copy of the resolution so passed. If he pays no attention to the notice, under section 21, he is liable to a fine of $100, or, in default of payment, to be imprisoned for 60 days.

I am,

Yours truly

FRANK J. KELLER,

Advocate.

NEAR THE END.

The next number will complete the third volume of this Journal.

After an experiment of three years we are fully satisfied that it has met a want in Canada, and, for reasons we will not question, has certainly received an amount of support from "our American cousins" which we scarcely anticipated.

The Canadian dental profession have in this Journal their first and only periodical, and, while sustaining those abroad, are materially interested in supporting at least one at home. It is unnecessary to reiterate facts well known as to the use it has been to the profession in this country; and, while no one feels its shortcomings more keenly than the publisher, he is sanguine enough to believe that, with the continuance of help from old contributors, and the promises from new, and with a greatly increased circulation, he can make the Journal still better in appearance and more useful in every respect.

Looking back on the labour attendant upon its publication, and three successive years of pecuniary loss—as journals of this kinds never pay their expenses, especially when they are not an advertising auxiliary of any manufacturer or college—the publisher would gladly retire from the work, were it not a labor of love.

The next number will contain the prospectus of volume 4; and we here beg to say that we will announce no arrangement which cannot be conscientiously and fully carried out. We may here state that the next volume will begin *a new series* with several improvements, and that we will delay its issue a short time in order to perfect arrangements for punctuality, &c.

B.

FOR OUR MUSEUM.

We acknowledge with thanks the receipt from Mr. Geo. Hutchinson, Ottawa, of a very large cuspid, which would pass very well for a relative of the case presented by Mr. Weagant; also, a plaster model of a very remarkable case of anchylosis, which we will illustrate in a future number. Our Museum of Dental Specimens grows. We hope to be able by next spring to show its practical adavntages.

Also some interesting cases of Exostosis, anomalous development of the fangs, &c., from Dr. T. A. Venner, of Quebec.

LIQUID NITROUS OXIDE.

Some two or three years ago nitrous oxide gas was successfully liquified in England, kept in strong iron bottles to prevent bursting, and

has been used very extensively by English dentists, and exclusively at the dental hospital of London, by Messers Fox, Clover, Coleman, &c. During the late Franco-Prussian war its portability was a great convenience to the surgeons of the two armies, and it was used with much success. It is said that as high as $5000, has been offered by parties in the United States for the set of apparatus and explanations for its manufacture, but without success. Johnston Bros., of New York, (formerly M. M. Johnston & Co.,) have at last succeeded in discovering the "secret" without any thanks to our friends in England, and now furnish the gas, in the liquified form, in bottles which are previously subjected to a hydrostatic pressure of 500 lbs. to the square inch before being used.

One hundred gallons of gas is condensed into a liquid in a bottle only twelve inches long by three inches in diameter, which can be carried in the hand from place to place, occupying very little room beside the chair.

What are the advantages of liquid nitrous oxide? Its portability is certainly one recommendation; the ability to tell exactly the amount left in the bottle after an operation, another; and if it be true, and experience seems to assert so in England, that less is required to produce insensibility than in the old form, that it is purer, because in the process of condensation everything but the gas is excluded by the very nature of the operation, and that it does not deteriorate as it is thought gas will when kept in gasometers, then the only consideration which can prevent its supplanting the present tedious mode of manufacture, is its cost, as of course it must needs be purchased from the manufacturer. We will hear more about it soon.

B.

THE LATE HORACE WELLS.

The reputation and the glory of the discovery of anæsthesia, undoubtedly belongs to the Dental Profession collectively, and to the late Dr. Horace Wells of Hartford, Conn., individually. The recent death of Sir James Young Simpson revived the discussion as to priority of claim; but the facts stand on record that the claims of Dr. Wells were confirmed by Sir James Simpson himself, in the very last article he wrote.

It is due to the memory of Dr. Wells, and due to our profession, that this claim should be maintained, and there is not a practitioner who respects his calling, but shares in the reputation which this discovery has

reflected on dentistry, It is quite unnecessary to repeat facts so well known as to the inestimable boon this discovery has been to the whole world, and the frequent proofs we have in our own practice, of its assistance in alleviating the pangs of tooth extraction.

Some time ago, we received a copy of a series of resolutions passed at a meeting of dentists in Hartford, Conn., held on the 11th of April, 1870, and our esteemed friend, Dr. J. H. McQuillen, desired our co-operation in extending the purport of the movement, viz., to raise funds to erect a monument to the memory of the late Dr. Wells.

We may have appeared to have been remiss in this matter, but we will here state our reasons for not publishing the resolutions at the time referred to. We learned that the widow of Dr. Wells was in poor circumstances and obliged to earn her living by her own hands; having had to support herself and son since her husband's death. It was said that she had often declared that the discovery of her husband "had been to her and her family an unspeakable evil, for it cost the life of her husband and substituted the 'res augusti domi' (scanty fortune) in place of a lucrative profession and a happy home." That this lady should have been so long neglected is a reproach to the dental profession; and while she is in the least need, we have no sympathy with funds for monuments. We wrote to that effect to the committee appointed in Hartford, and offered to give any assistance towards providing an annuity for Mrs. Wells, as the first consideration.

We are glad to learn that Mr. Fox, editor of the British Journal of Dental Science, has made a similar appeal to the dentists of England, and we trust that the Hartford committee will so change their action as to first secure comfort for Mrs. Wells, and then the monument; otherwise any such erection would stand as a memorial of a mistaken enthusiasm, and a reproach on the humanity of the profession. B.

MEETING OF THE SEVENTH AND EIGHTH DISTRICTS DENTAL SOCIETY, N. Y.

We have received from the President of the Eighth District Society a Programme of the proceedings of the meeting which is to be held at Warsaw, N. Y., on Tuesday, the 31st October, and he has requested us to invite any and all respectable dentists in Canada to be present. The annual meetings of these societies is one to which we always look forward with the greatest pleasure, for, from experience, we know that they are real live gatherings, and we hope to see a large number from Canada there.

C.

B. W. DAY., M.D., L.D.S.,

FIRST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ONTARIO.

THE CANADA

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ORIGINAL COMMUNICATIONS

B. W. DAY, M.D., L.D.S., FIRST PRESIDENT OF THE "ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO."

We are pleased to be able to complete this volume with the portrait of Dr. B. W. Day, late of Kingston, Ont., the convener of the meeting of Ontario Dentists held in 1867, which resulted in the successful organi zation of an Association and the incorporation of the Profession of Ontario. It is with unfeigned regret that we announce his departure from Canada to Chicago, and the consequent loss to the Canadian Profession of one of its ablest members.

Dr. Day is a native Canadian, having been born a few miles from the city of Kingston. He practised with marked success in that city since 1854, having always held a high reputation as a skilful operator and diagnostician, and one whose interest in his Profession, and whose opposition to superficial education, has always been consistent and sincere. In 1862 he graduated in medicine, after a complete course at Queen's College—one of the leading Medical Colleges in this country. In 1867, the meeting of Ontario Dentists convened by Dr. Day was held in Toronto, at which an Association was organized, and Dr. Day elected President. A committee was appointed to draft a Bill of Incorporation to be submitted to Parliament. The rest is a matter of history known to us all, and the following clause from the report of the committee, (Jan. 23, 1868,) on the President's annual address, will form the best comment we can make on the services rendered by Dr. Day to the Profession: "Your committee wish to record their appreciation of the valuable services of the President, Dr. Day. He has labored as perhaps few others have done. When success seemed doubtful, he still exerted himself for the elevation of our specialty, for which he is entitled, as he will receive, the hearty thanks of the whole Profession of this Province."

It is seldom that a scheme of value is consummated when it is originated, and it is a generally settled point that the accomplisher is more

deserving of honor than the originator. The idea of organization and incorporation was not new, and while credit is due to those who put forth efforts to effect reform and failed, the greater honor is due to those who tried and succeeded. The difficulties to be surmounted, the antipathies and suspicions to be calmed, and all the incidental obstacles to overcome in getting the Profession its present status in Ontario, was no mean labor, and Dr. Day and his co-laborers deserve lasting credit. To please all they failed to do, but there are few to-day who can dispassionately review the work performed and deny honor to whom honor is due.

For some years peculiarly encouraging prospects have been held out to Dr. Day by friends, to remove to Chicago. Previous to the great fire he had made preparations to start; and with his characteristic determination and continuity, and nothing daunted by the state of affairs, he left some weeks ago, and has already, we are glad to hear, exceeded his anticipations. As one of our leading operators in this country, and a thoroughly educated Dentist and Physician, we trust that the reputation be made for himself in Canada may be surpassed in the new field of his choice. He is undoubtedly a great loss to the Canadian Profession.

Dr. Day was first President of the "Royal College of Dental Surgeons of Ontario," honorary licentiate of Dental Surgery of the Province of Quebec, honorary member of the Quebec Dental Society, Surgeon to the 14th Batt. Vol. Rifles of Kingston, &c., &c.

The portrait is from a photograph by Sheldon & Davis of Kingston.

RELATIVE LIABILITY OF TEETH TO DISEASE.

By T. B. Hitchcock, M.D., D.M.D., Professor of Dental Pathology and Therapeutics in the Dental School of Harvard University.

Comparison of the following tables may prove of interest. One is from a French authority, M. Magitot, and gives the liability of the various teeth to Dental caries, based on a total of 10,000 permanent teeth, and is as follows:—

TABLE No. 1, MAGITOT.

Central Incisors	642	Superior	612	Right	304
				Left	308
		Inferior	30	Right	20
				Left	10
Lateral Incisors	777	Superior	747	Right	369
				Left	378
		Inferior	30	Right	20
				Left	10
Caries	515	Superior	445	Right	198
				Left	247
		Inferior	70	Right	20
				Left	50
1st Bicuspids	1310	Superior	940	Right	345
				Left	595
		Inferior	370	Right	170
				Left	200

2nd Bicuspids	1310	Superior	810	Right	400
				Left	410
		Inferior	500	Right	270
				Left	230
1st Molars	3350	Superior	1540	Right	728
				Left	812
		Inferior	1810	Right	910
				Left	900
2nd Molars	1736	Superior	690	Right	380
				Left	310
		Inferior	1046	Right	497
				Left	549
3rd Molars	330	Superior	220	Right	100
				Left	120
		Inferior	140	Right	60
				Left	80
Total	10,000		10,000		10,000

Superior	6004	Right side face	4791
Inferior	3996	Left " "	5-09

The other table I prepared from records of teeth filled or extracted; it illustrates their relative liability to loss and disease. It presents several variations from the first table :—

TABLE No. 2, T. B. H.

Central Incisors	1140	Superior	1101	Right	571
				Left	530
		Inferior	39	Right	18
				Left	21
Lateral Incisors	1062	Superior	1000	Right	520
				Left	480
		Inferior	62	Right	27
				Left	35
Canines	654	Superior	545	Right	262
				Left	283
		Inferior	109	Right	52
				Left	57
1st Bicuspids	1062	Superior	791	Right	374
				Left	417
		Inferior	271	Right	146
				Left	125
2nd Bicuspids	1319	Superior	827	Right	426
				Left	401
		Inferior	492	Right	250
				Left	242
1st Molars	2188	Superior	1090	Right	578
				Left	512
		Inferior	1098	Right	531
				Left	567
2nd Molars	1757	Superior	786	Right	384
				Left	402
		Inferier	971	Right	466
				Left	505
3rd Molars	818	Superior	384	Right	209
				Left	175
		Inferior	434	Right	222
				Left	212
Total	10,000		10,000		10,000

Superior	6524	Right side face	5036
Inferior	3476	Left " "	4961

RADICALISM.

BY E. A. BOGUE, M.D., D.D.S., NEW YORK.

There seems to be in our country a growing tendency towards Radicalism in dental practice; a notion, a feeling, more than a demonstration, that *we* are sure of the ground upon which we stand, as our predecessors were not; that the line of practice adopted by *us* must be correct, and therefore does not require any further investigation at our hands. So we fill every tooth with gold that requires filling at all; perhaps even we put upon our fee bill "nothing but gold used for fillings;" ignoring the many uses of gutta percha, tin and oxychloride of zinc, and amalgams; or we have become advocates for heavy foil, and we fill everything in the shape of a carious tooth with heavy foil, and mallet it home, producing a filling intensely hard, but illy adapted to the walls of the cavity, porous through its entire mass, and coarsely porous too, as much more as the foil is heavier than will easily pack to solidity with the usual pressure; or, we have taken to the restoration theory, and build out indiscriminately all broken or cut teeth to their original shape and size; or even exaggerate, in order to prevent future decay, from the contact of tooth with tooth.

Perhaps we are firm believers in the mallet, and decline to fill any cavity that cannot be reached by the mallet plugger—so we use the chisel, and spare not, with the end in view of being able to obtain direct access, the result being that we practically pronounce gold better than tooth substance.

To continue the list of extremes into which we run, would be but to enumerate our failures, for in just so far as we violate a natural law we fail of success in any undertaking, physical or moral, while our successes are all made by our harmonizing our acts with the processes of nature.

Much of this extremism, I am persuaded, has arisen from pecuniary considerations, either from the old idea that as gold is intrinsically valuable, *therefore* any operation performed with gold is more valuable than any other; or else from a pandering to the false popular idea to the same effect, not taking the trouble to teach first one's self and then one's patients, that oftentimes the most perfect gold fillings, inserted without strict regard to both anatomical and physiological knowledge, may be not only worthless, but positively injurious, giving rise to destruction of the pulp, discoloration of the tooth, abscess, and perhaps loss of the tooth or necrosis of the bone, or both.

How often are a few words of advice of more value than the best filling ever inserted, costing hours of labor and corresponding expense. If time were taken as the basis of all professional charges, much of this

inconsistent practice would, after a little, disappear, for it would be perceived that one's time would be rated valuable, precisely in proportion to one's acquirements, and he who was best able to diagnose (see through) a case, and treat it, would be the one who would secure the most desirable practice and the most remuneration, and he can then perfectly afford—pecuniarily—to use tin, or gutta percha, or any other material he may deem best for a filling, not only, but he will often see the need for variation from any one line of practice, just as the educated physician is not the man who goes about with calomel in one pocket and salts in the other, and deals them out with little regard to the pathological state of his patients.

There are many operations made in gold by dentists, that are so wearing upon both patient and operator, and so expensive pecuniarily, that the patients are deterred from visiting a good dentist again, the result being that there is positive loss to both patient and operator. It w uld have been better to insert tin or perhaps even amalgam (bad as amalgam is in the generality of hands.) I know several patients of great wealth, in whose mouths gold fillings, inserted by some of the best operators in New York, fail to preserve the teeth, while tin and gutta percha have proved to be quite as durable, easier to insert, less expensive, less painful, and more comfortable after insertion, than gold. Yet as large fees are paid for these operations, estimated by the time consumed, as was paid for the heavy gold fillings, costing from $25 to $75 apiece.

A little child, from three to six years old, requires fillings in its temporary teeth. How much better in every respect, a filling of thin and pure tin, susceptible of being placed in a few moments, or one of gutta percha, or oxy-chloride of zinc, that can be placed in one minute or two perhaps, than one of gold that, by its wearying power, will prevent the little patient from believing in the benevolent designs of the operator, and will destroy the influence for good for all future time. Yet a little more obedience to the evident laws of nature would have given the child the most complete preventive armory known to dental science.

Does any one ask how the scattered members of our profession are to attain to such professional skill? Simply by reading and comparing books with books, and men with men. I met, not long since, a dentist, living in the little city of Liege, in Belgium, who was fully up to the best standards of practice that are generally recognised among us. I asked him how he had accomplished it? He told me he took all the dental magazines that he knew of, in all the languages, and read them, carefully comparing the various views expressed, and putting in practice what to him seemed philosophical.

He often spends hours over one operation, and receives corresponding compensation, and yet all his colleagues receive a fixed fee.

So much for independent research and individual thought. It is sure to bear fruit.

DANGER *VERSUS* SAFETY.

By A. C. Cogswell, D.D.S., Halifax.

Correspond. Member Odontographic Society of Pennsylvania, &c.

In the November number of the *Canada Dental Journal*, I had the pleasure of contributing an article on "*Artificial Teeth in the Stomach*," giving the particulars of a case in point, in which a lady had been unfortunate enough to swallow a partial denture. As the case was, happily, one of rare occurrence, it elicited no small amount of conjecture as to the probable result, namely, would this foreign body become dissolved or remain in the stomach, and the patient live; or, would her life be endangered by its presence. I have no desire to anticipate the worst results; at the same time may not the chances be in her favor, as so long a time has elapsed since the case was swallowed. That occurred March 3, 1870, t particulars of which and the circumstances made the subject of a paper read before the Halifax County Medical Society, by the Hon. D. McN. Parker, and which appears in the September number of the *Canada Medical Journal*, in which the Hon. Dr. Parker has drawn one practical lesson applicable to especially the *wearer* of artificial teeth, if not, in some cases, to the *operator*, namely, "That badly fitting plates holding artificial teeth are *unsafe*, and should not be worn, especially at night."

Although cases of swallowing partial sets of artificial teeth may be of rare occurrence, it will not be surprising to hear of other cases, for *several reasons:* 1st. The number of parts of sets worn by many that have become loose by the loss of clasps or other attachments, as well as the absorption of the alveolar ridge. 2nd. The many badly fitting plates, made by travelling charlatans, whose desire is to do cheap work. *Quantity* and not *quality* being their motto. Constructing sets and partial sets on the poorest vulcanite base, or, if the better material be used, the vulcanite is *over done*, and *hurried up*, so as to be done up brown, causing the plate to be full of *air-holes*, *spongy*, and of a *dark brittle colour*, which must *necessarily easily break*, and if in a case of partial denture breaking at night, (which will be quite likely to occur when such cases are worn,) what is to prevent the pieces from passing into the throat, and thus endangering the life of the patient? Might this not become a serious

question, if it *was proved* that a material had been used for an artificial denture which was *unsafe*. This brings me again to another question, which may interest all parties, namely, will not repairing sets, or parts of sets, by repeatedly vulcanizing, make them *unsafe for* use?

No doubt the experience of every dentist has been that every time a plate is vulcanized after its completion, it not only loses its original colour but becomes more brittle, the elasticity becomes less every time, and after a piece has been subjected to the process of vulcanizing several times, especially a partial set, it becomes a question if it would not be safer to renew the plate entirely, or cut away the larger portion of the old vulcanite and replace it with new, not only for safety, but for the credit of the operator.

If patients who wear artificial teeth were impressed with the necessity of calling on their dentist at least once a year, many a word of advice could be given, and a few useful hints as to what might be required thrown in, to the advantage of the patient if not to the dentist. The lady whose case we have referred to as having swallowed her teeth, is still in good health. She has returned to the city and called to report herself, knowing we all felt an interest in her particularly; and not being discouraged from her experience of artificial teeth, had others replaced, and while the former may be still in the stomach, she experiences at least no inconvenience from them. Possibly they may not have quite such hard substances to crack, but certainly they are not in a position for her to choose.

CAPPING THE NERVE SIMPLIFIED.

By G. V. N. Relyea, L.D.S., Belleville.

I have within the last year or more adopted the following simple course when I found the nerve exposed, or when accidentally or intentionally uncovering it. Let me explain what I mean by intentionally uncovering a nerve. I hold that it would be perfect madness to suppose that a tooth that has pained for days, or perhaps weeks, from a diseased or inflamed nerve, can be successfully treated or the nerve tamed without a little "blood-letting."

The tooth being free from disease externally, which can readily be ascertained by the slightest pressure, the conclusion arrived at must be an abnormal condition internally, either suppuration or congestion of the nerve. If suppuration, the case in all probability is complicated, involving other parts, and will require a line of treatment not properly coming under this head, but which I will consider in a future article.

If it proves to be inflammation, or even congestion of the nerve, the case is simple. I endeavour very gently to lift the dentine covering the engorged nerve, and the surplus blood being thus released from its imprisonment, will readily escape and the patient experience relief. I allow it to bleed freely for a minute, then apply a pledget of cotton saturated in carbolic acid. This I leave about five minutes, then remove and prepare my cavity. Should it continue to bleed while excavating, all the better. When I consider my cavity ready I apply more carbolic acid, and leave it while I get my gold and instruments in readiness. Next, I fold a piece of bibulous paper four thicknesses, saturate in carbolic acid, and cut about twice the size of the opening. The fingers will absorb the free acid, leaving it just sufficiently oily to cause it to adhere to the walls of the cavity. If the cavity is small I carefully place my cap over the opening, put in sufficient gold to cover the floor of the cavity, which I gently press to its place, then wedge and finish up as usual. Should the cavity be large, I fill close to the opening, then place the cap in its destined bed and proceed with my filling. So successful have I been under this treatment that the wounding of a nerve gives me no concern, and I not unfrequently fill from one to three cavities the same day, in the manner before stated, and, indeed, sometimes for the same patient. Many of the teeth thus treated I never hear of again, and judging from those I got a chance to examine, I can say with safety I do not lose one out of fifty teeth, though many of my patients are suffering when they come to the office, and they come fully determined to have their teeth extracted. If the plan I have endeavoured to explain very briefly and imperfectly is followed and done with *great care*, the patients will leave the office free from pain, and thank you a thousand times (that is, if they have any gratitude, but some have none) for having relieved them from pain and saved their teeth.

AMALGAMS.

By Thos. Fletcher, F.C.S., London, Member Odontological Society.

The above subject having been broached a short time ago, a little further information on amalgans, as made and used in England, will, I have no doubt, be interesting. The ordinary amalgam, of silver and tin, as described, contains an enormous excess of free mercury, a simple proof of which exists in the fact that the mercury evaporates. The proper way to make this is to melt chemically pure silver and tin, in atomic proportions (108 parts silver to 118 parts tin) in a clean crucible, keeping the surface

of the metals covered with coarsely pounded charcoal. The temperature should be as low as possible, and the moment before pouring, the metal must be stirred with a stick. The surface of the ingot must be carefully cleaned and the whole reduced rapidly to filings with a revolving cutter, a magnet passed through the filings to removed any steel accidentally removed from the cutter, and the product put as quickly as possible into bottles well corked to prevent oxydation or absorption of moisture. If this is mixed with enough mercury to make a powder which adheres under pressure (about 7 grains of mercury to 24 grains filings), it will weld up under pressure as solid as coin, and the mercury cannot be separated under a red heat. If an excess of mercury is added it cannot be removed with pressure through a leather; any mixture so made will take up its own weight of filings, from the large excess of free mercury; and it is the presence of this excess which makes any amalgam comparatively worthless, and renders the washing with spirit necessary, as free mercury containing a small quantity of other metals oxydizes rapidly.

The other experiments with silver, gold, tin, &c., are of no practical value, owing to the same fault, viz. great excess of mercury.

With regard to platinum, which has been referred to as not forming an amalgam, I can only say that I have frequently used an amalgam of platinum, the process for making which was published a short time ago in the *British Journal of Dental Science*.

The great value of the addition of platinum to an amalgam has also been overlooked. It gives any amalgam the property of hardening with extreme rapidity, without contraction; an amalgam of platinum, silver, and tin, carefully made without excess of mercury, is hard enough to finish with file and water of Ayr-stone in about 10 minutes, and any amalgam of which the surface is carefully polished, will retain its color beyond comparison better than the ordinary surface, as it is generally left, from its being too soft to finish at one operation. The objection to using platinum is the difficulty of working, from its peculiar behaviour in contact with tin. When these two metals are heated to redness together, they combine with the evolution of a heat so intense as to volatilize instantly a large proportion of the tin, and frequently to explode or split the crucible with the sudden expansion. For this reason, a fire-clay crucible should never be used, as it will not stand the sudden change of temperature. It is necessary that these two metals should be mixed first, as the platinum and silver, if fused together, require a temperature so high to fuse them that the tin would be driven off and an uncertain compound produced, which would not be a true alloy. The best plan is to have the platinum as a fine wire, melt the tin under charcoal, and push

the wire slowly down through the charcoal, standing clear in case of an explosion.

Unless gas or charcoal is used as a fuel, the metals must be kept covered with the greatest care, to prevent the action of the sulphur always contained in coke or coal. I have very little doubt that the amalgam of the future will consist of Platinum, Tellurium, or Nickel, or a compound of these. But for the price, (80s. per oz.) Tellurium has, I think every desirable property. It is white, hard, an extremely bad conductor of heat, and in general chemical properties, similar to sulphur. Nickel is so refractory and troublesome to work, that any experiments take a long time; but so far as I have gone, it appears likely to be a valuable addition alloy for amalgams.

15 Bold St., Warrington, England.

EXTRACTS FROM THE PRESIDENT'S ADDRESS BEFORE THE ONTARIO DENTAL SOCIETY.

By G. V. N. Relyea, L.D.S., Belleville.

When I came to this country, now over thirty years since, there was not a local dentist except in the larger cities, such as Toronto, Montreal and Quebec, and they could lay claim to only two or three at most. Then the towns and country depended upon the trunk-in-hand itinerant, and the unskilful operations performed by most of them, will be long held in remembrance by an outraged community. But I am happy to say a brighter day has dawned upon us; dentistry now stands, in point of merit and respectability, on an equal footing with any of the professions.

Dentistry has, within the last quarter of a century, worked its way up from comparative quackery to a scientific and honorable calling, and this advancement in the art has principally been accomplished through colleges, journals and conventions like the present. And now, gentlemen, I beg your indulgence for a very short time, while I give utterance to a few thoughts such as the occasion seems to suggest.

The profession we have chosen is truly honorable in its claims, essentially useful in its practice, and as such should be dear to each one of us. It is the real love for the profession, combined with the requisite qualifications, that makes the successful practitioner.

It cannot be denied, however, that we are in a great measure the creatures of circumstances, and if circumstances have made us what we are, and we are without an innate inclination for the profession, a very great mistake has been made, and the sooner we rectify the error the better for ourselves and the community in which our lot has been cast.

I take it for granted, however, that no one here has so mistaken his calling, but that you, one and all, hold a high and honorable position in the estimation of your patrons, both as skilful operators and worthy citizens, and that you maintain an unsullied reputation, which is an indispensable requisite to permanency in any calling.

A physician may be skilful, he may be thoroughly versed in any department of his profession, he may pride himself upon the number of his diplomas, he may enlarge upon the extent of his continental travels, the many hospitals he may have walked; he may even claim pre-eminence in some specialty, and relate with eloquence the successful operations he may have performed; yet, if he is wanting in integrity, his reputation will be of a questionable character.

A divine may have the eloquence of an angel; he may draw after him the masses and electrify them with his perorations, delight them with his beautiful and chaste language, he may alarm them with his burning, withering invectives; he may by his peculiar manner, cause the sinner to weep and the saint to rejoice; yet, if with all these laudable and very desirable qualities he fails in setting a good example, he is a stumbling block to his people and a disgrace to his calling.

A lawyer may by his attainments, professionally be considered the end of the law; yet, if he does not walk circumspectly, his reputation will sooner or later wane.

A dentist may be a skilful operator, he may have everything perfect in his office and turn off nothing but first-class work, he may even be courteous, polite, obliging, indeed, he may be a man of the highest attainments professionally or otherwise; yet, if his character for integrity and moral uprightness is not of the highest order, he will only take a position questionable at best.

Without being considered presumptuous I beg to ask a few questions and point out a few errors.

It is said that cleanliness is next to godliness, and this proverb seems to apply to the dentist with double force. In this matter we all need line upon line.

Let us look into Mr. A.'s office. Are his windows free from cobwebs; is his spittoon free from smell; are his napkins and his towels clean; are his instruments free from rust? Do I hear an answer in the affirmative. Well. Now let us interview Mr. A. himself. Is he neat, clean and tidy in his dress and person; does he keep his hands clean; is his breath free from the taint of that abominable weed, the mention of which I would not stain this paper with; in short, does he set a good example by showing a clean set of teeth?

Let us interview Mr. A. a little further. Have you sympathy, can you feel for your patients; can you keep up their courage by a kind word; are you willing to apply soothing remedies; are you gentle and will you bear with your patients should the operation be severe and protracted?

Further; have you a "good morning" for your little patient should you chance to meet her on the street; and are willing to acknowledge your poor patients with a kind "*how do you do?*"

Again; can you control your temper should your patient become nervous and insists upon holding your hand with both hers while you excavate the cavity? Do you ever quarrel with your patrons about the fees after the work is done?

Are you punctual about appointments, and will you accept a reasonable excuse should your patient be behind time.

Are you polite and respectful to your older patients; will you bear with their infirmities and answer all reasonable and unreasonable questions?

Gentlemen, these questions could be multiplied; but I desist, and beg to assure you that, though rude and hastily thrown together, they are pertinent and worth your consideration.

Now a few words about our errors. Whence do we err? In this matter I will take my own practice and experience. Never attempt to do more than you can do well.

Have you a patient from a distance who wants a certain number of teeth filled, and limits you to time; my advice is, fill the best teeth, do it well, if it is only one in a day, and charge for time; and if the patient fails to get the rest done, they will lose more than you. The impression is that the dentist makes money. Now, I contend that when a piece of work is well done our patrons are the gainers. I care not what the fee is. I say again, do not undertake too much. Do I hear some one say I could do more if I could get it to do. Let me say in answer to this; do thoroughly what you get to do, and it will soon bring you more. There is an error among us which I shall term a malady. It is gold on the brain. I do not mean by this that mania which generally and assuredly attacks a community on the discovery of a piece or nugget of gold; nor do I mean that undue desire for the acquisition of it; but the mistaken ambition on the part of not a few of our good operators to make mammoth gold fillings and get fabulous fees. I am not by any means going to discourage any operator from making large gold fillings and getting as much as his conscience will allow, and the circumstances of his patients will justify; but what I will say is this, let every man, before he

attempts to fill a ten, fifteen, thirty, one hundred, or one thousand dollar cavity, just make sure that he is not undertaking too much. Unless you are doubly sure of success, better save your gold and your reputation. There are many contingencies in an operation of this kind, but I have not time to point them out. A case was reported to me not a great while since, where a good operator filled a tooth for which he charged $18, and it proved a dead failure in less than twelve months.

The patient would unquestionably come back and complain; and allow me to ask would they not be justified in doing so? And again let me ask, how is a dentist to make an honourable amend under such circumstances? Therefore I say again, make doubly sure and avoid these shoals, unless you want to be cursed and have your reputation damaged. If you have a doubt about a filling, take it out and put in a good one, no matter about the time or cost. If your patient refuses to have it done, remind her that it is at her own risk. If there is any imperfection about a piece of mechanical dentistry that is to leave your office, and you have not time to remedy it, be sure to apprize your patient—never deceive.

Never tell your patient that a tooth is out when you know quite well that you have broken it. Your sin will be sure to find you out. It is said open confession is good for the soul, and I blush not in admitting that I too have erred. I filled three teeth for a young barrister, charged him $14, and they are now filled with Townsend's best amalgam well washed in high wine, that is if they have not gone altogether. I erred in judgment. Look well to these matters.

Never deceive your patients. Does an anxious mother steal into your office to tell you that she is about to bring her darling child in to have a tooth extracted, and wants you to tell the child you are not going to do it, and thus get out the tooth. Give that mother a lesson on telling falsehoods. Tell her you will assist her in fighting it out, but you will never lie to her child.

A parent brings in a timid child to have a permanent molar extracted. The patient, an innocent sufferer, has been promised relief if she will have it out. She readily takes the chair, not knowing what is coming. Do you, under such circumstances, assure your patient that it will not hurt? What I have to say is, if you do, my wish is, you may never get another opportunity to hurt that patient.

CHLOROFORM IN DENTAL AND MEDICAL SURGERY.

Read before the Montreal Dental Society. By J. H. Webster, L.D.S., Montreal.

The following cursory remarks on ether and chloroform, and their administration as anaesthetics, in dental and other operations, have been hastily put together to contribute to the fund of information this evening, and I regret not having had time to do justice to a subject of so much importance as this, and one with which, as you are all aware, I am perfectly familiar.

Perhaps no ten professional men in this country have administered ether and chloroform as often as myself. I having been the first to introduce both into Canada; the first to manufacture chloroform, when the imported article was selling here for one dollar per oz., and the first to manufacture ether, so as to insure its purity and strength.

The first time that ether was administered outside of my Surgery was for an operation by Dr. Wolfred Nelson, assisted by his son, Dr. Horace Nelson, in the presence of several medical students and other spectators, for the removal of a tumor. The patient was a poor woman, living in Thompson's Yard, Griffintown. I administered the ether, and with such satisfactory results that many other medical men were induced to give it a trial. The next time that I was requested to administer it was in the Hotel Dieu Hospital, to an old man, for the removal of a broken silver catheter from the bladder. I at first declined, as it was the belief of six surgeons present that the man could not survive the operation, owing to his advanced age and weakness. I was, however, persuaded by Dr. Thomas Arnoldi to do so. The anæsthetic was successfully administered, the catheter removed, and in a few days the man was discharged, cured.

I had much to contend with in the introduction of ether, on account of the timidity with which many regarded its administration. A rather humorous anecdote may here be related. I had lent one of my instruments for administering ether to a friend of mine, a Professor in a medical college, who wished to experiment on a Tom cat, in the presence of his class; he succeeded in procuring a fine, large, healthy animal. When all was ready Tom's nose was put in the mouth-piece, well secured to it with a towel, to prevent air entering by the sides of the mouth-piece; at first there was a great struggle and some kicking by poor Tom; in a short time, however, he became quite docile, and allowed a leg to be amputated, his two ears to be clipped off, and his raw flesh to be seared with a red hot iron, without moving a muscle; and well he might for poor Tom was dead. Although it was midnight, my friend deemed it his duty to call on me immediately to relate the circumstance, and begged me to desist from

using the anæsthetic. I asked him if he was sure that Tom died from the effects of ether; he replied, "Yes! without the shadow of a doubt." I told him that I had very serious doubts myself, and would like to settle them immediately by examining the case. He having a key to the college, I dressed myself and went there with him, and there lay the cat, dead enough to be sure. The next thing was to investigate the cause of death. I took the mouth-piece and put my nose into it and was soon convinced that if the Professor had held me there for a few minutes as he did Tom, my fate would have been precisely the same. The mouth-piece was made with tin valves, iron wire through the hinges. By former use the saliva had got into the hinges and rusted the wire; the lungs of ten cats united could never have opened it; the cat was suffocated. I persuaded my friend to get another Tom for the next trial, which he did, and went through the same operation; this time the valves had been oiled and were in good working order: first the leg was amputated, the ears cut off, and the raw flesh seared with a red hot iron without the slightest motion. In a very few minutes the effects of the ether passed off, the cat opened his eyes, gave a stare and a squall, and made a lunge through a light of glass into the street and that was the last seen of that cat.

I am not at all timid in the administration of chloroform; as a proof, I have given it to my own daughter for four hours and forty-seven minutes, twenty-two and a half ounces of chloroform without the least bad effect. There are persons to whom I would no more think of giving it than an ounce of arsenic, but I have frequently given it in cases considered dangerous, and, in well known cases, where others have positively refused to proceed. I attribute my success in a great measure to confidence and care, two requisites which many administrators lack.

It is well known that fear counteracts the effect of most anæsthetics; the first point is to disabuse the patient's mind of any dread. I often succeed with patients considered unmanageable, by saying: "Now let us try a little to accustom you to it, and if it be disagreeable we can wait for another time; just inhale sufficient to observe its effect, keep perfectly quiet," and, if any spectators happen to be present, keep up a lively conversation with them. In the hundreds, I may say thousands, of cases in which I have administered I have not seen one that I could not get perfectly under the influence of ether or chloroform.

There is one point which I always regulate, as of vital importance, and one which I know to be much neglected that is the necessity for giving plenty of atmospheric air.

Mechanical appliances such as those of Clover, Sansom, Snow, and others, may hasten the anæsthesia and economise material, but, unless in careful,

experienced hands, I do not consider them as safe as the towel although very excellent for experienced administrators, for, it must be admitted, that many undertake to give chloroform, ether, and nitrous oxide gas, who do not know the first principles of administering them.

While pinning faith to the towel, I think there is a prevalent and dangerous method of using it, viz.: folded into a cone open at both ends, the large end covering the mouth and nose. Now it is very common to see this cone applied over the nose and mouth and held close to the face, so close that no atmospheric air can find entrance, except through the small end, which aperture varies in size from a ten-cent to a fifty-cent piece, while at times that hole is quite closed. It is very difficult to keep such a hole open in a towel, even though it may be quite stiff with starch, and in this way it is absolutely impossible to obtain a proper admixture of air to reach the lungs; the patient gags, chokes and coughs, and clearly learns that the anæsthetic is being forced on him instead of irresistably affecting him. If any method of administration be objectionable it is this.

Sansom, in his work on chloroform, shows that he took more pains to invent a mechanical appliance in which to give chloroform, than to investigate the use of the simplest method, the towel. "The greatest objection," says he "to the administration of chloroform in a handkerchief (towel) is its irregularity, and the utter ignorance we have of the strength of the vapor inhaled at a given time; at one moment a quantity of air strongly impregnated with chloroform may enter the lungs, at another a breath may be taken of almost pure atmospheric air."

Now, notwithstanding this high authority, and the fact that fifty-five per cent. out of one hundred and nine fatal cases ensued with the handkerchief, towel, or tent, it may be fairly assumed that the anæsthetic was in most cases administered by comparatively unexperienced persons, and, judging from the incautious way we see the towel used, that it was held so close to the face that the patient was actually *suffocated to death*. The above extract from Sansom, too, shows an exaggerated importance given to details, which my long experience proves to me are no reliable guide.

In the first place I prefer some of the very "irregularity" complained of by Sansom, and think it not only admissible but highly desirable to admit occasionally a "breath of almost pure atmospheric air." The cone if used should not be held nearer than two inches from the face. Dr. Richardson says that "to give chloroform on a rag is *wasteful*" this should be no consideration whatever. What has economy to do with safety. Death may ensue from *suffocation* when all air is excluded and it

is a fact that some patients will endure suffocation for a time from ignorance, fearing to interfere with the operation.

I never use the cone, but prefer a soft towel held open on the palm of the hand folded loosely and the sides frequently reversed, it gives a free admixture of air. This is the easiest, most pleasant and safest mode for the patient; I therefore hold it the best. Many argue that my method entails great waste, and it requires such a quantity of chloroform that it makes it too expensive; the cost is, in my opinion, the last thing to be considered. If you have a patient who is able to pay, charge him a fair price; if he be not satisfied, better decline administering it. If you have a poor patient rather make him a present of the operation than risk life. Of late I have used with great success a face-piece similar to Clover's, with a bag and guage, wherein I can mix whatever percentage of air with the chloroform I choose, more or less, or give pure chloroform, or pure, air as I think proper, and the patient continues natural respiration. At the same time I would by no means advise inexperienced operators to try this until they become perfectly familiar with the instrument.

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GROSS CARELESSNESS WITH ARSENIC.

By Harrison L. Napier, London, England.

An instance of gross carelessness on the part of an inexperienced Dentist, came before me to-day, and I send it to you, as a mite of information from an English subscriber. The Dentist referred to is a late importation from New York, who thought he would come over here to enlighten the benighted British people, but who finally gravitated down to his proper sphere of a quack dentist.

A patient applied to him for relief from toothache in a proximal cavity in the second left upper molar. A large fungus growth of the pulp had almost filled the cavity of decay, and the gums and alveolar processes had receded from the neck of the tooth. A party who brought the patient affirmed that the first day the Dentist placed a bit of arsenic—having told the name of the remedy—in the cavity and over it a piece of yellow wax, that for four successive days the pain increased, and the Dentist re-applied the same amount of arsenic, stopped with wax, into the cavity. The fifth evening the face began to swell; the throat was so affected that breathing became difficult, and on Saturday, the 7th day, the patient died. This was the only time he had ever required Dental services; was a strong man of about thirty-five and temperate. "Our American cousin" has disappeared.

REASONS FOR DOING CHEAP WORK.

By X. Y. Z.

A frank but simple confrere in my vicinity recently gave me his experience of cheap dentistry, which may be serviceable to us all, as tending to show the extreme folly of giving our services at the ridiculously low rates which characterize many a fair operator to-day in Canada, and which is fast driving many good men into other means of obtaining a decent living.

My friend enumerated, as follows, persons who considered they had a claim upon him for a reduction of fees :—

1. His clergyman and family.
2. All other clergymen, Protestant and Roman Catholic.
3. Particular friends of his Parents.
4. Clerks in his brother's store.
5. Friends of his cook and housemaid.
6. Members of two societies to which he belonged.
7. People from the country, who thought the Dentist ought, literally, to pay part of their travelling and board expenses.
8. His relations (who, of course, expected everything *gratis*.)

The fact is that we Dentists in Canada are not making much more than our "bread and butter," when, as a valuable Profession, we ought to rank in the matter of pecuniary profit, as well as of *status*, with medical men or lawyers.

A Cheap Dentist has no kind of encouragement to be a good Dentist; and I for one, am getting disgusted with the *self dis-respect* of half its members.

THE ABUSE OF PLASTIC FILLINGS.

Read before the Montreal Dental Society, by W. George Beers, L.D.S., Montreal.

The ignorance or depravity of some men in the Dental Profession brings discredit upon its reputation—for there is no use flattering ourselves that our Profession is exempt from members who are ignorant because uneducated, and quacks because constitutionally depraved. There is no operation in Dentistry, but may be shamefully abused; and allowing for the stage of immaturity through which we all have to pass, and during which time we doubtless did work that would now bring a blush to the cheek, there is a frequent abuse of plastic fillings now extant to which I venture to draw attention for a few moments. It is dangerous to extol even a good principle or practice too much, because there is no principle or practice in Dentistry but has its limits and res-

trictions, and there are men in the Profession who will carry a practice to any extreme, so long as it is convenient and cheap.

Many of the best operators and thinkers in our Profession to-day are those who count their practice by decades, and whose intellectual and physical vigour overmatch the most of their young compeers. But there are a few practitioners of the old school still left who prefer an old way of doing a thing lest the trial of a new way should involve more study and investigation than they care to give; who have made up their minds to make the supply of Dental knowledge obtained in their youth do them for the rest of their lives, and who have a superstitious respect for the dry bones and dead ideas of their ancestors. They magnify men of their opinion, however obscure, into men of eminence, and dwindle those who differ with them, however famed, into nonentities. If they could have their way, experiment would never break the delusion of ignorance, and old opinions would be more weighty than modern investigation.

It is now generally conceded by those of the old opponents of amalgam who are progressive, not prejudiced, and who have the independance to think, test and observe for themselves, that the abuse of this plastic filling at the time of its introduction, by the use of an impure, uncleansed mixture of filed coin silver, which when amalgamated was seldom washed, and when used was never used well, led many to abstain from or abandon its use, and that thousands of good teeth were then extracted by leading practitioners which no other filling would save. It is also conceded that many cases exist to-day of teeth filled thirty years ago even with this dirty mixture; and moreover, that the amalgams of the present day and the present mode of manipulation bear no resemblance to the material and manipulation of 1845: that used as intelligent dentists use them, they will preserve teeth that anti-amalgamites admit they would extract, and that in the hands of skilful men who know how to use, not to abuse them they are at present invaluable.

There is a cowardly sensitiveness with some leading men in our Profession about openly discussing this question, lest they be ranked with those who use amalgam almost exclusively. If there are any doubts about a point of practice, it is discreditable to a man to enforce that practice at all; but those who use amalgam discriminately ought to be able to give as good reasons for their practice with it as with gold, and then unite in the condemnation of the men who abuse it, an abuse which is almost as prevalent to-day as ever, even though the material is purer.

The charges made against it so long ago have only been repeated by a very few, and they mostly men whose words are more consistent than their work, while on the other hand *its abuse* is strongly condemned by

those who know how to use it. If there had been any sound grounds for the charges made a quarter of a century ago, they would have gathered force, as they grew in age, with the growth of the Profession. Have they done so? Quite the reverse. And is it at all likely that in the remarkable progress which has characterized the Dental Profession during the last twenty years, that on this one question our leading operators and thinkers in Europe and America have been blind? Far more probable that those who oppose amalgam *in toto* with the persistent virulence and prejudice of the old time, have not been able to catch up to the rapid progress around them, but are to-day worse operators and poorer thinkers than in days gone by. If we were to judge from what we see and know of such men to-day, what kind of opinion of them could we consistently form? Take gold fillings and mechanical dentistry, and we daily meet with gross abuses of both in the mouths of patients who have been for years not alone under the care of quacks and superficially educated practitioners, but under the care of men who step down from their serene altitude to expose the abuses of Dentistry, and the history o whose professional lives is one of slander and conceit.

The abuse of amalgam cannot be denied; but what is there in Dentistry not abused? Is there any greater imposition and sham than in the abuse of gold? Considering the immense amount of amalgam used from year to year—and what a wonder we've never heard of an amalgam epidemic mortality, though it has been used so long, so much and so ill!—I think we ought to have more independent discussion on the subject, not to ventilate the egotism or boasting of men who condemn it in print (for capital) but who use it on the sly, and make their patients believe it to be something else, but to help to free us of some of the shackles on free thought and investigation which were imposed over a quarter of a century ago, and to which some of the old practitioners are still slaves.

I here present a collection of extracted teeth badly filled with amalgam, with the history of which I am acquainted, though not one of them was filled by me: and here let me digress to say, that it is an advantageous and profitable study to investigate the history of failures. No. 1, is a specimen of a very frequent result of filling such teeth, when so badly done. In the first place, the pulp had died from congestion, and had remained unfilled for two months after it had ceased to pain, and the face had been swollen a month before. The dead pulp was not removed previous to filling, nor, as you can see, was the decay half excavated, or proper preparation given to the shape and borders of the cavity. The very first principles have been ignored; a careless investigation failed to discover the

full extent of the cavity, and I should judge a lap of gum had been growing *over* the edge *and into* of the bottom of the cavity. In addition to this, a cusp of an upper molar antagonized too soon, and evidently prevented the rest of the teeth meeting. Now here we have a condition of things which could not be improved upon to produce as it did—periosteal irritation, inflammation and suppuration; a condition of things, too, which would as readily have been induced by gold or any other filling. To begin, this tooth clearly should never have been filled at all under the circumstances existing at the time; and if an attempt was made to save it, demanded considerably more care. Nos. 2 and 3 were filled in 1849, and were removed last year, being the only two in the mouth which had withstood the destructive seige of decay. These two cannot be said to be badly filled considering the lease of life they have had, but there are apparent extensions of decay, which could have been prevented by a more thorough trimming of the borders. Among the points which induce failure in the use of amalgam we may enumerate as most important points: 1st, previous condition of the tooth and periosteum which would diagnose the *laisser-faire* policy, if not extraction; 2nd, imperfect preparation, consisting of thin overhanging walls of enamel under which the filling is packed, but which ultimately crack and break down from mastication, exposing an unpolished edge of enamel and an easy entrance for decay; 3rd, leaving deep fissures already decayed or discoloured, which have their issue from or into the edge of the cavity to be filled; 4th, cutting the walls at the orifice so as to run two sides to a point in a sharp angle—these often running into contiguity with depressions certain to decay, and fissures already indicating its advances; 5th, leaving the extreme outside or inside edge of the cavity sharp and unpolished; 6th, leaving the filling too high, so that when it hardens one or more cusps of antagonizing teeth bear upon it too soon; 7th, not finishing the amalgam flush with the walls in approximal cavities, leaving overhanging ledges which press upon the gums, retain particles of food in contact with it and an adjoining tooth; and in crown, buccal and labial cavities, letting the amalgam lap over the edge of the cavity, and 8th, neglecting to finish or polish the filling a few days after inserted. I here present rather a disgraceful abuse of amalgam. A first and second molar having large approximal cavities, facing each other, were filled, as you see, with a very impure amalgam, and instead of being filled separately and independently seem to have been purposely united, so that in an effort to remove one, both were removed, and cannot now be separated without filing or breaking.

I do not know any better way to demonstrate the abuses of

amalgam than by the cases presented, or a better means of pointing a moral and teaching a lesson on the care demanded, even in the use of the easiest manipulating filling we possess. It is noteworthy that teeth badly filled with amalgam last longer in the aggregate—the filling often clinging to the tooth when it has only one retaining point—than those badly filled with gold; and my honest conviction is, that many calling themselves Dentists would do less harm to humanity, and bring less discredit upon Dentistry by using such a filling as amalgam—which, in their hands, may save the teeth—than an article which they know they cannot use properly.

It is well here, before leaving this subject, to say that there is no excuse whatever for using amalgam in the front teeth, and that, wherever it is inexpedient to insert gold, we have a temporary substitute in osteo-plastic or Hill's Stopping. Approximal cavities are more liable to discolor than those situated on the crowns, and the discoloration which would be of comparatively little consequence, should it ensue, in back teeth, is an objection in conspicuous cavities.

Those who oppose amalgam *in toto* are forced to admit that they have no permanent substitute where a soft filling is demanded, by reason of the looseness of the tooth or other circumstances; and have to admit that they extract teeth they cannot fill with gold, or temporize with other soft fillings which are only temporary. This brings us to the abuse of other plastic fillings; and here I present specimens of teeth, some of which could not be well filled with gold at the time, but others which could—which were plastered up every six months, until the edges chipping away and breaking down left the teeth only fit for the forceps. I have frequently met with vigorous healthy patients who had had amalgam fillings in the teeth for five, ten and fifteen years, who were persuaded to have them cut out as endangering the system and the teeth. The expert operator, after charging a heavy fee for cutting out the filling, exposed the pulp in several cases, inserted gold or tin foil, which in every case fell out—as boasting and conceit are not the essentials to make a gold filling hold in—and finally patched them up with osteo-plastic and Hill's Stopping. The consequence was that the teeth which, if left alone, would in all probability have lasted a lifetime, are now lying before you crownless stumps. The amount of suffering endured by the patient, the waste of time and exorbitant charge for such a result, would lead us to trust that a day may come when such outrageous imposition—for it is nothing less—can be made actionable, and such malpractice in the mouth be as criminal as malpractice in any other part of the body.

The abuse of oxy-chloride of zinc, Hill's Stoppings, and other such

plastic fillings, is wide-spread, owing partly to the ignorance and quackery prevailing in a large part of the Profession, and the inappreciative task of a large part of the public who neglect their teeth, and will not encourage, by reasonable recompense, the efforts to do the best that can be done with gold. The human teeth were not created for Dental experiment, and there has been enough of this to satisfy any one of the temporary nature of these plastic fillings. There are certain favorable constitutional conditions and circumstances in which they will last several years, but they ought never to be inserted as permanent, and teeth filled with them ought not to be considered as "finished" until replaced with a permanent material. We see a great many valuable teeth destroyed, particularly the bicuspids from this abuse or misuse of these fillings. Patients cannot and will not run to the Dentist every month in the year to have fillings replaced. A summer at the sea-side may ensure the destruction of half-a-dozen bone filled teeth in the same mouth. If you are not able to fill a tooth with gold it is better—but who would do it?—to send your patient to one who is, rather than see the teeth ruined. Better fill teeth not conspicuous, with amalgam, that will preserve them a lifetime, than with gold, which in your hands is only a deception, or with soft fillings which need renewal every few months. Plastic fillings, properly used, have been an immense blessing to the Profession and the public; abused they have been a curse. In the hands of dentists who are ignorant and genuine quacks nothing in Dentistry is safe or reliable.

The discovery of a soft filling of a suitable colour, as durable as gold or amalgam, and as easily introduced as the latter, would, perhaps, be a mingled blessing and a curse. To those who would use it honestly it would be a great and lasting good; but it seems to me it would bring about a degeneracy of the whole art of filling teeth, and quackery would flourish wider than ever. It would be just what the quack Dentist would desire, because then he would boast that he could insert it as easily as the best operator in the land. This, however, is questionable, but the abuse of the present soft fillings in use, as previously referred to in detail, would seem to predicate no better success with a better material, should one be found.

A Surgeon General in H. M. Navy, recently showed me a white filling in a lower molar which was inserted nearly twenty years ago by a native Chinese Dentist in Hong-Kong. It had every appearance to the eye of being oxy-chloride of zinc, but it was impossible, as it had withstood mastication and the action of the fluids of the mouth so long. He allowed me to try the drill on it; it was as hard as amalgam. We know that the Chinese were famed for their cement for household pur-

poses, and I am inclined to believe that this filling referred to above is something we do not possess. I offered to replace it with gold, *gratis*, if he would let me remove it, but he refused. It would certainly be a kind of sarcasm on the dental profession of Europe and America if we were to be indebted for the plastic filling to the investigation of Chinese Dentists. Can the American Dentists in Hong-Kong give us any information on this subject? I doubt if we will find the *desideratum* in the metals. Many experiments have been tried; one Dental-chemist having seven different plastic fillings in the teeth. All the oxy-chlorides dissolve and decompose by mineral acids and caustic alkalies. Some which are perfectly insoluble in water are invariably dissolved in the mouth. The crystalline silicates incorporated with anhydrous zinc oxide in osteo-plastics are coarser in some than others. Guillois cement for instance, has less glass than Smith's oxy-chloride of zinc, and the glass it contains is coarser. Compounds of zinc seem to be a failure for the object desired. Some have suggested Zn. Cl. 2,6 ZnO., as the most durable of oxy-chloride, if they could be properly formed. Mr. Tomes suggested oxy-chloride of magnesium some years ago, but its color, its slow setting, and its solubility in acids, make it objectionable. Peroxide of manganese with soluble glass have been tried; it is very hard and resists the action of water. Pulvarized silica and gum copal, and various other preparations have been proposed, but so far all have serious objections. No suitable metal has been left untried.

SELECTED ARTICLES.

VULCANITE PLATE WITH THREE ARTIFICIAL TEETH, SWALLOWED AND RETAINED IN THE STOMACH OR BOWELS.

Read before the Halifax County Medical Society, June 6th, 1871. By Honble. D. McNeill Parker, M.D., Edin., L.R.C. E., Member of the Legislative Council of Nova Scotia, Halifax, N.S.

Mrs. H., a lady's maid, aged 25 years, a pale, thin, and small woman, of delicate constitution, had worn for some length of time a vulcanized plate containing originally five artificial teeth, which had been manufactured and fitted by a Dentist, in Liverpool, England.

It occupied the front portion of the upper jaw and held teeth, to represent the two incisors and canine of the right superior maxilla, and the second incisor, and first bicuspid of the left bone; both the latter being absent at the date of the accident. The platinum pins (four in number)

which had connected the two lost teeth to the plate, projected from its surface.

Absorption of the alveolar process, and an altered condition of the gum, had caused the plate, which at first fitted well, to become loose, and hence difficult to be kept in position. On rising from bed on the morning of March 3rd, 1870, she sneezed violently, and this was immediately followed by a deep inspiration. The former act displaced the plate from its position, and the latter, (the deep inspiration) drew it instantly into the pharynx, where it was fixed for some little time, beyond the reach of the finger. The contractile action of the pharynx and œsophagus, by degrees forced it downwards, so that on her arrival at my office a few hours after the accident, she felt it near the lower part of the sternum ; and before I could use an instrument, she was aware that it had escaped from the œsophagus to the stomach.

I immediately passed a probang, but failed to discover it. She had suffered much from pain and difficult respiration during its descent. The pain continuing in the cardiac extremity of the stomach, an opiate was administered, rest was enjoined, and she was admitted shortly after to the Provincial and City Hospital for treatment. Efforts were there made to discover its locality, but without success. She was put on a diet of farinaceous food, with milk and prunes *ad libitum*. The latter (the prunes) were given with the idea that their outer and less soluble parts would be likely to become entangled in, and firmly connected with, the plate and teeth, so as to round off the sharp points, and thus lessen the risk of injury to the canal. She was soon dismissed by the surgeon in charge, relieved from suffering, but with the foreign body still in the stomach, or some other port of the alimentary canal.

Since then she has from time to time, suffered from general abdominal tenderness and swelling, nausea, vomiting, frequently recurring attacks of diarrhœa, accompanied by inflamed mouth, tongue, and pharyx ; (when these latter symptoms have been present, she has always, with one exception, tasted, throughout the attack, the vulcanite of which the plate was composed,) temporary suppression of urine, loss of voice, pain and numbness in left arm, hand, face, and sometimes of whole left side.

On several occasions she has been faint, powerless and unconscious for some hours. I have never seen her while thus attacked, but from the description of her then condition, given me by others, I may state that her symptoms resemble those of a person suffering from a form of hysteria not unfrequently met with in young females. It is necessary here to add, that she had on more than one occasion been somewhat similarly affected prior to the accident.

The menstrual function has never been interfered with, and I have generally found the heart's action undisturbed.

At times she has been apparently well, and for some weeks after her discharge from hospital her health was as good as usual; but recently she has failed in strength, and has more frequently suffered from some of the local or reflex symptoms above referred to, and will be obliged to relinquish her situation from physical inability to perform its duties.

REMARKS:

The measurements taken by me of the space occupied by the plate—as defined by the patient—would make its length about three inches, and its breadth fully one inch; but it is probable that the figures given by A. C. Cogswell, Doctor of Dental Surgery of this city, who has written an account of this case in the *Canada Journal of Dental Science* for November, 1870, are more accurate. He states the measurement to be respectively 2 inches, and $\frac{3}{4}$ of an inch. Allowing these figures to be correct, it seems difficult to imagine how a plate of this size, with three teeth attached,—its curve being more acute than usual, in consequence of the formation of the superior maxilla of the woman—could have passed down the canal from the mouth to the stomach.

By a most unhappy circumstance, the deep inspiration which drew he loosened or detached plate into the pharynx, carried it thither, with its long axis directed backwards and downwards; else it never could have entered the narrow superior strait of the canal. Being properly directed by the contractions and propelling power of the stomach, it may have passed through the pylorus, but I think this is not probable. There is not, neither has there been, any persistent local symptom which would indicate with any degree of certainty its true position.

The efforts made to detect it in the stomach having proved abortive, the idea of snaring or hooking the plate by appliances which had suggested themselves to the surgeons of the hospital, could not be carried out,—hence she still wears the teeth, but in a locality where I fear they will rather retard than assist the process of digestion.

Within the past year a case almost identical with that now under discussion was recorded in the London *Lancet*, if I mistake not, in which an hospital surgeon not only discovered the site of the plate, but successfully extracted it by means of an instrument used for the purpose of removing coin or other foreign bodies from the œsophagus. To have hooked or seized such a body, in a large, distant, and dark cavity like the stomach, and to have caused it to enter the œsophagus in its long axis, precisely as desired, was, to say the least, a most happy result, and one

that might not be attained again, even by the same operator, in 90 cases out of a 100.

In this connection I may remark, that a practical difficulty may meet the surgeon seeking to remove such a foreign body as a plate, with teeth attached to it, from the stomach.

He might be able to seize it firmly, and yet fail to get it to enter the œsophagus ; and still have further and greater difficulty in detaching the instrument from its hold of the plate or teeth, without doing serious violence to the stomach ; and this difficulty might very readily occur where snares of wire or twine are used for such a purpose. Hence the necessity of being guarded in selecting the surgical appliance for such an operation.

The question arises—What will become of this foreign body if it is not passed "per vias naturales ?" And a second inquiry very naturally follows the first—What will become of the patient if it remains in the alimentary canal? If I am correctly informed, the material of which it is composed is not likely to be dissolved by the action of gastric juice, or by any of the secretions it may come in contact with, should it pass the pylorus. Dr. Cogswell, in the article already referred to, says :—

"I felt desirous to know what mineral acids would dissolve vulcanite rubber, hence I experimented with the various muriatic, sulphuric, and nitric acids, found the two former had no effect upon the piece placed in it, but by applying nitric acid and chloroform, after 24 hours the piece had become quite like a sponge in softness, could easily express the coloring material from it, and in drying it could be rubbed up liked powder between the fingers." If these strong mineral acids have failed to dissolve, or chemically change the material of which vulcanite is composed, I think we may safely conclude that the secretions of the digestive organs will hardly be able to accomplish it, and that the plate in question will, if not passed "per rectum," long continue in the canal without material alteration.

In reply to the second question—What will become of the woman should the foreign body continue in the canal ? no certain statement can be given ; but bearing in mind the history of recorded cases, somewhat analogous in their general features to that now under consideration, it may be remarked that it is possible, and even probable, that this vulcanite plate and teeth may be retained for years without destroying life, or even producing very alarming symptoms. On the other hand, grave symptoms may unexpectedly present themselves ; the patient's life may be placed in jeopardy ; or death may suddenly occur from inflammation, from ulceration, and perforation, or from its becoming impacted and obstructing the canal.

Dreading these not improbable contingencies, I objected to her being sent across the Atlantic to her friends in England, shortly after the accident occurred, on the ground that sea-sickness, if troublesome and violent, would be likely to produce irritation and perhaps fatal consequences.

The practical lessons to be learned from this case, are:

1st. That badly fitting plates holding artificial teeth are unsafe, and should not be worn—especially at night.

2nd. That much larger bodies than we could suppose may find their way (accidentally or otherwise) into the stomach.

3rd. That when received there, even large and irregularly shaped bodies, may—and often do—remain for a length of time without producing alarming symptoms.

September 14th, 1871.

I heard from this woman about the first of the present month, at which time she w s a resident in the State of Rhode Island. She still *wears* the plate in the alimentary canal, and says that her health is quite as good as it was prior to the accident.—*Canada Medical Journal.*

DENTAL.

The Dental Association of the Province are doing a good work, and one which will redound not only to the improvement of their own position, but to the great advantage of the general community. The practice of dentists in putting out show cases filled with all the paraphernalia of the Profession, the false teeth and unsightly gums, &c., which are much more repulsive than attractive to the public, and especially to those requiring the services of the owner, is being done away with. It will also add much to the respectability and standing of the Profession to remove these pettifogging advertisements which are so common at present on our best thoroughfares. Legal opinion having been taken, it was found that the Board had power to prohibit their use, which will, as soon as possible, be effected.

The Association has also obtained certain rights and powers from the Legislature by which they can deter any one from the practice of Dentistry who has not passed the examination of the Board, and obtained its license as a duly qualified person.

That this will wipe out a vast deal of quackery in our midst is certain, if properly applied, and if the Board but follows up and utilizes the powers it has obtained. What suffering might have been saved to many an unfortunate fellow mortal if this course had been adopted years since, we can guess at, but not compute. We believe, however, that a rapid advance is now being made in this science, and that Dentistry is taking a stand

from which the world will derive much benefit. In this it is going hand in hand with the sister science Pharmacy, which is at least being placed on a footing more in accordance with its own dignity and importance, and more in accordance with the safety and well being of the public—*Montreal Daily News.*

BIBLIOGRAPHICAL NOTICES.

Treatment and Prevention of Decay of the Teeth. A Practical and Popular Treatise. By Robert Arthur, M.D., D.D.S. Thirty-eight illustrations. 256 pages. Philadelphia: Lippincott & Co., 1871.

We regret to be unable to notice this valuable little work *in extenso*, but promise to review it in full at some future time. In the meantime we can advise our readers, one and all, to buy the book and read it for themselves. The name and reputation of the author is alone a recommendation of the work.

Transactions of the Dental Society of the State of New York, 1871.—We are indebted to the Secretary of this Society for a copy of these valuable transactions, forming a neat volume of 170 pages.

The Physician's Annual for 1872.—A complete Calendar for the City and Country Practitioner. Philadelphia: S. W. Butler, M.D. 1872. Price, 50 cents.

This little work of 80 pages comprises a Monthly Calendar; Hospital Calendar of the principal cities of the United States; Chronological Record; List of Medical Colleges and Institutions; List of Medical Societies, Medical and Dental Colleges of the United States; with forms of Constitution for Medical Societies; Priced Catalogues of Medical Books, Surgical Instruments, &c., besides much other information of interest and importance to physicians.

EDITORIAL.

EXPLANATIONS.

We feel that the unprecedented delay in issuing the last number of Vol. III, now (May 1872) demands some apology and explanation. During the month of October, 1871, a case involving the intent and value of the Dental Bills of the Province of Quebec and Ontario arose in the Superior Court of Montreal. We were asked to defer issuing this number in order to get in a report of this case, as we had decided to

delay issuing Vol. IV, until arrangements pending were perfected to improve the Journal, and insure invariable punctuality. This case has dragged its slow length along, and without any prospect of a speedy settlement. Therefore, we omit any report, and will give an epitome of it in a future number. Suffice it here to say that the attempt of the plaintiff to obtain the Licence through a supposed flaw in the act, and so avoid *an examination*, is by no means creditable.

Other circumstances have helped to delay matters. We will soon, however, be in a position to announce that the publishing department of the *Journal* will be in the hands of a firm accustomed to it, and that this great burden will be off our shoulders, and leave us free to attend to the editing department.

In future the *Journal* will be edited impersonally—dropping all names of editors from the covers and editorials.

APPRECIATIVE PATIENTS.

One of the greatest pleasures of professional life is to find our services rewarded by an appreciative intelligence on the part of our patients. There are some men, otherwise intelligent, who have less regard for the care of their teeth than the cut of their whiskers, and who would be in infinitely hotter water by the loss of a shirt button than the sacrifice of a molar. They care little about them because they do not think about them, and do not clean them because they do not care. If you can persuade them to get decayed ones filled, you may take your oath that they have put you down as having had one thought for them and a dozen for yourself. On the other hand there are faces which we welcome in our office, like a bright clear day. They appreciate the value of their teeth; abhor "cheap and nasty" work, and respect the dentist as a professional man, not as a "tooth carpenter." They ask for information about their teeth —their anatomical, physiological and pathological character—; they remember your advice and act upon your warning. They are not satisfied to wait for the premonitions of pain, but visit you for inspection periodically, and appreciate it sufficiently to pay a fee to have it thorough. They take a pleasure in a good filling in a tooth, even if it is conspicuous; and the only way to gain their unswerving attachment as patients is to do for them the best that Dentistry can afford. They do not higgle about fees; they pin faith to your honor, and would rather pay double the value for a superior operation than anything at all for one done badly. Such patients are one of the best stimulus to honest endeavour.

THE TESTIMONIAL TO MRS. HORACE WELLS.

The movement in England to present a substantial testimonial to the widow of Horace Wells, instead of erecting a monument to his memory, appeals to the common sense benevolence of the Dental Profession, and has met with much success. A few weeks ago we received a subscription paper from Mr. Fox, editor of the "British Journal of Dental Science," asking us to give the movement some aid in Canada. A little start has been made, and those who may feel disposed to contribute to this object may send their amounts to us before the first of June, 1872. Subscriptions will be thankfully received, however small; but the Committee in England desire none to exceed one guinea. Amounts sent to us will be acknowledged by the Treasurer in England, in the "British Journal of Dental Science," and No. 1 of Vol. iv. of this Journal.

The following paragraph lately appeared in a contemporary:—

"Some of the Dental papers are indulging in much pity for the widow of Horace Wells, stating that 'Mrs. Wells is in great need,' and shedding ink by the gallon over her deplorable fate. Well, if the lady is in 'great need,' why not put your hands in your pockets and give her some money to help her in her necessities? That would certainly be more becoming than telling the whole world of her sufferings! You pay a poor compliment to her feelings by parading her name and sufferings before the community. The truth is, that these editors want to make of their sympathies. That is all. 'Only this and nothing more.'"

In reply to this we have to say that, though Mrs. Wells is not in the very deepest want, yet she is in need, and has frequently been obliged to admit it. Now, it is a very successful principle to announce beforehand your contempt for an object of benevolence if you are anxious to avoid being asked to subscribe, and we think it would have been more to the credit of our impulsive contemporary if he had imitated the example of "these editors," and subscribed to the fund. "That would certainly be more becoming."

We may add, too, that it "would certainly be more becoming" if our "American cousin" and contemporary had shed a little decent ink on behalf of the widow of an American dentist, instead of leaving its origination to *confrères* in England. We are sure that the large majority of American dentists cannot but commend the spirit which invoked this generous appreciation and friendliness in England.

SUBSCRIPTIONS RECEIVED TO DATE.

W. Geo. Beers, Montreal, $4; C. Brewster, Montreal, $4; C. S. Chittenden, Hamilton, $4; A. Bernard, Montreal, $4; W. Young, Montreal, $4.

DEATH OF DR. B. T. WHITNEY, OF BUFFALO.

We sincerely regret to learn of the death of Dr. B. T. Whitney, Buffalo, well-known as an earnest dental reformer and educator, and also in connection with the vulcanizer interest and manufacture. One naturally reveres the men in our profession who have stood forth as landmarks of its progress, and whose name and reputation have been as household words, even in the days when dentistry was very far behind its present position. As one who has contributed by his devotion to his profession, and by his untiring investigation and study, to elevate the status of dentistry as a profession and the practical excellence of its members, Dr. Whitney's memory must ever be enshrined in the hearts of those who are not mere dental money-mongers, but who look forward to the noble position dentistry may some day attain, by faithfulness on the part of those who are now enrolled in its ranks.

PROF. J. H. McQUILLEN.

The readers of this journal, as well as of every other, will regret to learn that Prof. McQuillen, after thirteen years' editorial connection with the *Dental Cosmos*, has relinquished his connection with that valuable periodical. The *Cosmos* owes its reputation in a large measure to his untiring ability and enthusiasm, and to the scholarly and scientific manner in which he has for so many years handled his pen in the cause of dental science, art, and education. We know fewer harder worked men in the Profession, taking into account his duties to his private practice, the *Cosmos*, the Philadelphia Dental College, and various societies in which he was interested. The readers of this journal have several times been indebted to his courtesy and kindness; and while in one sense the Profession will be a loser by the severance of his connection with the *Cosmos*, we are hopeful that, with more leisure on his hands and less responsibility, he will be able to devote more time to his special studies and investigations, and that the result will be seen in many an article from his pen in our dental journals.

HONOR TO DR. BERNARD.

Our readers who know Dr. Bernard, President of the Dental Board of Examiners of the Province of Quebec, will be glad to learn that after serving the city of Montreal in various capacities as Councillor and Alderman for a successive number of years, he has been elected by his confrères to the highest office in the gift of the Council, viz., that of Chairman of the Finance Committee, a position demanding high administrative and financial ability.

THE

DISCRIMINATE USE OF

AMALGAM

FOR

FILLING TEETH,

BY W. GEORGE BEERS, L. D. S.
SURGEON DENTIST.

Montreal:
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1871.

About a year ago, Mr. H. M. Bowker published an article on the use of amalgam for filling teeth, in which he asserted:

1. "That whoever used '*Amalgam*' was unskilful, ignorant and dishonest."

2. "That the 'Royal College of Dental Surgeons of Ontario,' and the 'Dental Association of Quebec,' (Province), advocated and encouraged its use; and that nearly all the Dentists in Canada advocated its use."

3. "That *he did not* use it."

This method of advertising one's self is not at all rare; but the effort to depreciate the Dental Institutions of the Dominion, and the private practice of one's competitors, has, I am happy to say, had its origin in Canada in this first literary attempt of Mr. Bowkers'.

In replying to Mr. B.'s first article, quotations were given from the leading practitioners of the day in Europe and America, favoring the proper use of amalgam.

The accompanying article was written to refute personal and other assertions in his second article.

The fact that amalgam was once virulently opposed, even by leading men, is poor argument against its use now. How much of the dental practice of the present day, like much of medicine and surgery, was sneered at as visionary twenty years ago!

AMALGAM FOR FILLING TEETH.

BY W. GEO. BEERS, L.D.S., MONTREAL.

FROM THE CANADA JOURNAL OF DENTAL SCIENCE.

The revival of the venerable views on amalgam, and the specious but fallacious arguments adduced against it, which any one can read almost *verbatim* in old numbers of the *American Journal of Dental Science*, is to me like turning over the leaves of a dusty folio, which has been laid aside for half a century, and finding between two of the pages a dead, dry fly—a veritable blue-bottle. Mr. BOWKER "rings out the same old changes," and harps on the same effete strain as did his dogmatic masters of thirty years ago. To the dental profession the question is a trite and worn-out theme. Common sense and superior intelligence have almost unanimously ignored the prejudiced tirade against amalgam *per se;* dispassionate investigation and discussion have removed the unreasonable opposition to its discriminate use, except from the minds of one solitary individual in Canada, and a "corporal's guard" in the United States: and it must be remembered that there are always a few men in every profession, who assume a superior intelligence to the rest of their colleagues, but whose professional history, with rare exceptions, does not generally present any proofs of their great superiority, other than what they themselves assume. Thirty years ago there were probably two hundred dead opponents of amalgam, when there were not over 1,000 dentists on the continent, and they poorly educated; to-day, though there are probably 30,000 dentists—hundreds of them having had the benefit of collegiate education—yet there is only one in Canada, and a few in the States, who hold the extreme views expressed in Mr. B's. article. Mr. B., would therefore, have us infer that the dental profession has actually retrograded; that the intelligence of those who recanted their old views is not so great to-day as it was thirty years ago; that thirty years' college and associative reform has done nothing for its intelligence! It would occupy an entire number of the *Journal* to give even a bare epitome of the bitter "Amalgam Controversy" of 1842-45, the vulgar personalities it engendered, the defamation it produced — which Mr. B. seems to have imitated in regard to our Canadian Dental Societies—and the injurious tendency of the affair on the progress of the dental profession. To re-discuss the whole subject of amalgam would, I am sure, be an unneces-

sary concession to an opponent who cannot offer one original argument, and who has to resort to arguments which have long ago been refuted, and which the enlightenment of the profession utterly ignores. However, I have no objections to lay bare a few of Mr. B's misstatements, and I beg a careful reading from even the most prejudiced.

I was prepared for the array of quotations from the minutes of defunct societies, old dental periodicals, *et cetera*, to which my opponent is at last reduced, and which he now submits as *fresh testimony* (!) against the use of amalgam. I will take it for granted that Mr. B. has never used amalgam, as it will more conveniently allow me to dispose of his arguments. His *dernier resort* is precisely what I wanted, to show that not only has he made rash statements in reference to the views still held by some of the strong anti-amalgamites of 1845, but that *his* views of amalgam have not kept pace with the dispassionate investigation and intelligence of the times, which has led almost all of the old opponents who are living to so modify their practice as to use the filling.

I freely confess to a great want of respect for old authorities in dentistry, and should be as much disposed to regulate my practice by what was gospel in 1845, as to follow the vagaries of Celsus, or pin faith to the chemical speculations of the 16th century. My opponent appeals with deference to old writers, who enunciated principles and practices when the science of dentistry was at its dawn, and much of whose assertions are mere theory, easily disproved by first year students, and who are more cherished for what they did in smoothening the way to progress than for any positive authority they now possess.

And yet we do find dentists in practice who continue to destroy all exposed pulps; to extract all teeth affected with chronic periodontitis; to treat hyper-sensitiveness of dentine with arsenic; to cram arsenic around the neck of roots of teeth, in order to cause absorption of the alveolus, previous to attempting their extraction; to use the old key of Garengeot almost exclusively; and to follow many other antediluvian principles, simply because Harris or Mrs. Grundy so advised, and because they have not the independance to think for themselves, or the liberality to concede to others who differ with them the barest possibility of being in the right. They make dentistry a science of speculations rather than a science of facts, and are as tenacious, not only of their views on amalgam, but on every other dental question, as if there was concentrated in their brains an incarnation of sagacity, equal to that of the seven sages of Greece stewed down together in Æson's chaldron. The one distilled drop of otto of roses from a million blossoms is not a circumstance to them.

As I showed in my first article, Dr. PARMLY used precisely the same arguments thirty years ago as Mr. B. endeavoured to startle the readers of the C. M. J. with as original, and neither Mr. B. nor any one else has ever been able to add one whit; excepting the proportions of amalgam as given by my opponent—64 parts of mercury to 36 of silver—which are, I will admit, "purely original: his figures, however, remind me of the story of the weaver, who added the year of our Lord at the top of his page to the amount of his profits, and who got astray in the small item of of $1860. On the 19th July, 1842, Dr. PARMLY wrote: "I *once* prepared some amalgam, and filled *a dead tooth* with it for Mr. N., of New York, and he is the only person in the world that can exhibit a tooth ever touched by me with it; *having proved* its deleterious effects I uniformly condemn it, and have condemned it for many years." Now here the great anti-amalgamite exposes a specimen of the scientific reasoning indulged in on amalgam. He admits he only used it once, and in a *dead* tooth, (and yet saved that tooth,) and then, with characteristic logic, concludes that he proved its deleterious effects from mere theory and this one case. Mr. BOWKER, however, does not need even to test the material for himself. He has the opinions of authors, such as HARRIS and PIGGOTT, who participated in the amalgam war of 1842, and who cannot conveniently recant, because they are dead; the opinions of Dr. PARMLY, who has not been in the practice of dentistry for over twelve years, and who does not now presume to offer himself as an authority; he has old volumes of the *American Journal of Dental Science*, which are as dear to him as the Koran to the Mahometan; he has resolutions against amalgam of *old* societies passed during the Amalgam war, which certainly cannot repeal them, because the constant bickering ruined their usefulness, and they have been defunct for two decades; he has *old* opinions of eminent dentists; but the peculiarity about it is that the *American Journal of Dental Science* of to-day rejects the dictum of the *American Journal of Dental Science* of 1842, and the eminent dentists whom Mr. B. quotes as having said such hard things against amalgam in 1842, have recanted those hard words, and now use "the poison!"—"So much for" Mr. H. M. BOWKER.

I must reiterate the regret expressed in my first article, that my opponent found it necessary in relieving his mind of his opinions on a scientific question, to impute "ignorance, want of skill, and dishonesty," pointedly to our Canadian Dental Associations, and to all who were not exactly of his opinion; and to assert, with that innate modesty which characterizes great men, that as all the dentists in Canada, except himself, used amalgam, therefore he was the only skilful and honest one

left in the Dominion ! With such contributions to the polite literature of the dental profession I shall not attempt to compete. But this assertion compels me again to remove the impression his articles were intended to convey, viz.: that amalgam is *par excellence* used indiscriminately by those who use it at all, and that those who use it with discrimination are equivalent to those who use nothing else. He also endeavours, in true 1842 fashion, to make his readers believe, that because I defend the use of amalgam at all, I defend its exclusive use by quacks. Very gentlemanly, indeed.

Every honest dentist accepts the very simple proposition, which is not at all original with Mr. B., but was made and accepted before he was born, or dentistry was a regular profession—that gold is decidedly the best material for the teeth in every case where it can be used. I mean used so as to preserve the tooth and not so as to fall out in a few weeks or even years; used so that the fact of gold being in the tooth is unmistakable, while the fact that the decay has not been half removed or the filling not properly condensed against the parieties of the cavity, is unmistakable too. It is rather trite to present the fact that the principle of every honest dentist—assuming that the public really believe there are other honest dentists in Canada besides my modest opponent—is to use gold for filling teeth as much as possible; and also that the principle of those who use amalgam, is to use it mostly in teeth which my opponent admits he would extract.

Mr. B. extols tin-foil in lieu of gold, and does not seem to think that galvanic action can be excited in the mouth with gold and tin as well as with gold and silver ! I never yet saw a tooth that could be well filled with tin, but that could be better filled with gold. I have seen fillings of tin quite as discoloured as bad uncleansed amalgams. Circumstances occur where a soft filling is an absolute necessity, unless the tooth is extracted. The principal consideration in favor of tin over gold is the one Mr. B. seems to despise in amalgam, viz., cheapness. There is no medicinal virtue in gold-foil. To be of use at all it must be thoroughly consolidated, and classes and conditions of decayed teeth exist which are too frail to bear this requisite consolidation, and yet which with a filling easily introduced can be made useful for mastication for life. Now, no honest dentist would use amalgam in a front tooth, for the simple reason that a front tooth is more exposed; and the most precious, most orthodox filling is demanded. Amalgam in some mouths will discolour on the surface but in the large majority of cases where a good amalgam is properly inserted, it does not discolour. It is more liable to discolour in approximal cavities, because the tooth-brush cannot reach these points. However,

several of the preparations of gold, such as sponge gold, &c., much used by some dentists, will become as black as ink on the surface. Under no circumstances would I prefer to insert tin-foil in a front tooth; gold can be just as easily inserted in every case.

The opponents of amalgam meet with frail cavities which they cannot fill with either gold or tin-foil, and they either extract the tooth or fill it with a preparation of gutta percha and silex; or another compound called oxy-chloride of zinc,—a preparation of refined borax, quartz, French white zinc, which is calcined; and to the frit formed, calcined zinc is added, and the mixture made by forming a paste with a solution of dry salt, chloride zinc and water. Neither of these can make permanent fillings, and I have seen many cases where teeth were plastered up with these destructible articles, and deluded the patient into the belief that they were securely filled, when the edges were breaking away, decay creeping in, and destruction ensured, where good amalgam would have saved them. Take very large cavities in the molars; the labial and posterior sides broken away. To fill these properly with gold would necessitate an expenditure of time and material which few people in Canada, at present, appreciate sufficiently to pay for. And here I would say that in one family of four children, in Montreal, well known to Mr. B., I inserted 56 fillings—none amalgam,—all of which, with the exception of 8, had been filled with gold, and oxy-chloride of zinc, by an anti-amalgamite who considers himself something superior, about two years before they came into my hands. In the teeth of one young man, well known to Mr. B., I replaced 10 gold fillings which had been inserted by the same dentist as the above case, about eighteen months before. Now, if a dentist inserts such gold fillings, and charges the highest price, surely he had better have let them alone, and surely amalgam would be better for *him*, at least, to use.

There are a class of dentists who have a class of custom among the poor. If they fill the teeth of the poor with any other soft filling than amalgam, they deceive the patient as to the permanency of the filling; if they use gold or tin exclusively, neither the cost of the former nor the labor of either can be remunerated. And what then? Either the dentist must starve, or the teeth of the poor must be consigned to Mr. B's. scientific way of escaping an impediment, viz., extraction.

I wish emphatically to remark, that I do not and did not defend amalgam *in toto*. There is not an honest dentist in the land but denounces its indiscriminate use, and will rejoice when some non-metallic soft filling as good can be discovered to replace it. I perfectly agree that there is too much used, just as most of physicians agree that there is too much medicine used. But there are poorly qualified dentists as well as

physicians, and you cannot regulate the practice of either in the respective particulars. The *abuse* of a medicine is no argument at all for its abolition, or what would be left of the pharmacopœia? Our Canadian dental societies were organized for the express purpose of elevating poorly qualified dentists to the highest standard they are capable of attaining, but Mr. B. consistently ignores their usefulness and defames their reputation in the Canada Medical Journal. Can he divine a better way to change any malpractice or mistaken practice than by giving them gratuitous instruction and clinical education? Any dentist can show from the work of "cheap dentists" and some who esteem themselves superior, such abominable specimens of gold fillings as to lead many to condemn gold for filling. Mr. B. is satisfied to look at the bad operations or failures of others with amalgam. Has he no perception for the like in gold? and do all gold fillings preserve the teeth? This dodge of classing those who use amalgam occasionally, with those who use it exclusively is worn out.

A question arises here which it may be as well to dispose of. Can Mr. B., be so ignorant of the proportions of amalgam as to believe what he absurdly asserted in his first article—"When the mixture is subjected to the highest pressure in order to remove the free mercury, the amalgam then contains a preparation of 64 parts of mercury to 36 parts of silver?" What physician believing such to be the case, but would condemn amalgam, as it would never harden in the tooth, and would certainly be swallowed. If Mr. B. is not ignorant of the absurdity of these figures, what were his motives in publishing such a statement, associated as it was with the other assertion that nearly all the dentists in the Dominion *except himself*, used it?

I consider it my business as a dentist to regard the preservation of even a single tooth, in the most of cases, as highly as a physician would a human life. The very end and essence, the *summum bonum* of the honest dentist is to save the human teeth, and conservative dentistry is far above the mere mechanical. Any quack may extract a tooth; every one cannot fill it, even with amalgam, so as to preserve it. Mr. B. admits with bucolic innocence, that there are teeth which cannot be filled permanently with anything *he* now uses in his practice,—for it is a fact that other *soft* fillings than amalgam are not permanent—and that rather than fill a tooth with amalgam he would extract it! There is dental science for you with a vengeance! And from "the expositor of the abuses of dentistry" too! Now according to this scientific admission, my opponent must have extracted hundreds of teeth, because he would not use amalgam, when thousands of proofs exist everywhere in this very city, and many

proofs in the teeth of physicians and their families of Montreal, that amalgam has healthily preserved teeth from further decay, which would have been consigned to Mr. B's. forceps.

Like nearly all opponents of amalgam, he presumes to speak *ex cathedra* on a point of practice which he "conscientiously affirms" he has never tried! He offers his theoretical knowledge against the practical experience of the thousands of other dentists who are teachers in colleges, eminent operators, leading writers of the present day, not of 1842; many of whom are also medical graduates, and who are the acknowledged head of the profession in America and Europe. I should like my opponent to explain the qualifications he possesses to justify him in this assumption. Is he not like the critics who judge a book from the title page, and who, be it marked, are invariably the most dogmatic and intolerant critics of all? Which testimony in the use of a medicine would be most worthy of confidence,—that of the comparatively obscure man who avows his opinions to be due to second-hand text books, back numbers of old periodicals, old opinions of writers, which they recanted, and resolutions of defunct societies, or that of the men who have the lead in every progressive dental movement, who are the acknowledged leaders in this most progressive period of dentistry, who, with one or two exceptions, repudiate the assertions of the former? Mr. B. would positively have the world believe that mere opinions formed thirty years ago are more reliable than as many years practical observation and experience!

There are points and paragraphs in Mr B.'s last article which I cannot quietly pass over—they are too tempting to omit. He labors hard for arguments, and gives as his reason for accusing the "Royal College of Dental Surgeons of Ontario" of encouraging the use of amalgam, that "in the *Canada Journal of Dental Science*," vol. 1. page 210, are to be found questions put to the students on amalgam, in the said College. The wrong use of the plural instead of the singular number does not seem to rub against the grain of his conscience whenever it can make an argument appear stronger. There were not "questions" asked. There was only the one question asked. "What is an amalgam," and this not by the examiner on Operative Dentistry whose office is to "encourage" the proper materials for filling teeth, but by the examiner on Chemistry, whose office is to treat his questions from a purely chemical point of view But what has he to say about his false charge against the Dental Association of this province? Nothing more than that as I was Secretary of the Association at the time, and because I edited the *Dental Journal*, therefore the Society of which I was Secretary "advocated and vindicated the use of amalgam!" Very logical, indeed. Very original logic.

Peculiar to Mr. H. M. B. And yet, Mr. B. conveniently overlooks the important fact that the only reason I wrote on amalgam was to disprove *his* false accusations, and that *he had published* the false accusations in the *Canada Medical Journal* before I wrote a line on the subject. "So much for" Mr. H. M. B. How monotonous it is for some men to tell the truth!

He also says "the American Journal of Dental Science" has always in its articles on the subject taken a most decided and *uncompromising* stand against the use of amalgam," and yet in the second paragraph of his article, he says that the present editor of the *Journal* "thinks I have taken an extreme view, and believes that amalgam *can be safely used* in teeth which are mere shells." He mentions HARRIS, WESTCOTT, DWINELLE, S. BROWN, PIGGOTT and PARMLY, all of whom he says, "repudiated the use of amalgam, and *those of them now living remain unchanged* in their opinions on this question." Well, HARRIS, BROWN and PIGGOTT are dead; DWINELLE refuses to discuss the subject; PARMLY is no longer in practice, and WESTCOTT, who is still a leading man in dentistry and who was actually the brightest man of them all, has recanted his old opinions. The "*American Journal of Dental Science*" in reviewing Mr. B's. first article said as follows:

"This article is somewhat severe upon the "Royal College of Dental Surgeons," and the Dental Societies of Canada. *Who Mr. Bowker is we do not know*; perhaps the "*Canada Journal of Dental Science*" can enlighten us; but whether Mr. B. is qualified by professional *experience* and *investigation* to make a report upon this subject or not, much that he says is true, but at the same time we think that he has taken an extreme view of the case.

"Although no advocate for the indiscriminate use of amalgam and believing that tin-foil is much superior as a *cheap* material for filling teeth, yet we think this compound may be used in teeth which are mere shells, so far gone that no other metal can be safely introduced, and that it will preserve such teeth for a time at least, especially where their extraction is contra-indicated for some good reason.

"On the other hand such fillings should never be used in teeth which it is possible to fill with either gold or tin-foil; and in no case should amalgam be used in front teeth, or in the pulp cavities of teeth, or in the proximity of a living pulp.

"When properly prepared and properly introduced, instead of amalgam fillings containing 64 parts of mercury to 36 of silver, as Mr. B. asserts, the proportion of mercury need not and should not be half so great.

The objections urged against this compound in Mr. B's. article would certainly hold good, *if the amalgam used at the present time was as im-*

pure as that employed ten or twelve years ago. But a great improvement has been made not alone as regards the purity of the ingredients composing amalgam, but also as to the manner of preparing and introducing it into the teeth.

"The following is the best method for using this material in cases where its use is indicated." Then follows the detailed description of the "method of use. Now I ask any one of common sense if that is the uncompromising condemnation" of amalgam Mr. B. would make his readers believe the American Journal of Dental Science still maintains. This extract is from the pen of *the present editor* of the A. J. D. S.,—Prof. GORGAS, who is also Professor of Dental Surgery and Dean of the oldest Dental College in the world, that of Baltimore. Knowing Mr. BOWKER'S high appreciation of the A. J. D. S., and all connected with it, I wrote to Prof. GORGAS and received the following answers to questions, Dec. 2, 1870.

Question—Do you not believe that amalgam will preserve a healthy tooth?"

Answer (by Professor GORGAS.)—"I do, if it is properly inserted into a properly prepared cavity."

Question.—"Do you think it better to extract a tooth, as Mr. BOWKER says he would do, rather than fill it with amalgam."

Answer (by Professor GORGAS.)—"I should prefer having a tooth filled with amalgam, to having it extracted, and would so advise my patients."—"So much for" Mr. H. M. BOWKER.

Dr. WESTCOTT'S writings and sayings seem to have great weight with Mr. B., who says, "Dr. WESTCOTT, *an authority*—he having filled the Professorial Chairs of Operative and Mechanical Dentistry, in the Dental Colleges of Baltimore and New York—is one of *the original and most indefatigable writers against* all preparations of mercury for filling teeth. What does he say? His utterances are not uncertain; what language can be more decisive? He, in the most emphatic manner, says, "No man who has so little self-respect as to use this amalgam *to any considerable extent* will refuse to stoop to any species of quackery which will contribute to his pockets," &c. Precisely so say I; and every honest dentist joins in condemnation of the men who use amalgam to such a considerable extent as to seldom use anything else. Dr. WESTCOTT was once an editor of the *A. J. D. S.* He is a great authority on amalgam, Mr. B. tells us, and the latter quotes what he said twenty-five years ago; a quarter of a century does not enlighten one according to Mr. B.'s theory. I trust, however, his weak nerves will survive the

following little shock, and that Dr. WESTCOTT will continue to hold a place in his memory. Mr. B.'s "authority," like all sensible and unprejudiced men, has the manliness to acknowledge his erroneous views on amalgam, and is now using "the poison." He was the Secretary of the "American Society of Dental Surgeons," which passed the resolution against amalgam, and his name is appended to that resolution with Dr. PARMLY'S; and so zealous a seconder was he of the bitterness of the latter that he was named his "*fidus Achates*."

"*Syracuse, Jan.* 16, 1871.

Mr. W. GEO. BEERS—

Dear Sir,

I am in receipt of your letter upon the subject of the use of amalgam. I would have replied more promptly could I have found time t write you as fully as the subject demanded; for having somewhat *modified my views and practice* within the last fifteen or twenty years upon the subject, I hardly liked to give you the views I now entertain without giving you fully my reasons for such modification, and the restraints and limits I still hold in reference to their employment. Should I get time to do so, I will at some future time write out my views fully upon this subject, stating when, and only when, how, and only how, I use amalgam for filling a tooth.

Very truly yours,

A. WESTCOTT.

May I not return the salutation of my opponent, and say "So much for"—Mr. H. M. BOWKER.

In another place my opponent says, two leading Ontario dentists—one the co-editor of the *C. J. D. S.*—"agree in the main with me as to the use of A." Well, it seems necessary to reiterate that every honest dentist agrees that the indiscriminate use of amalgam is wrong, and that the use of *Mr. Bowker's amalgam proportions* is not only wrong, but worse. But how hard up my opponent must be for arguments, when he has to quote such a statement of dentists *who actually use amalgam*.

He courteously says, I do not tell the truth in saying that the "American Society of Dental Surgeons" did not *unanimously* carry the resolution of 1845 condemning amalgam. The facts are these (my readers can interpret them as they please): sixty-one members voted dead against the resolution when it was first brought up, and after these sixty-one had either resigned, or were expelled for non-compliance with the rash and silly movement, the remainder then "unanimously" (!) carried their own resolution. Mr. B. also denies that this resolution was finally rescinded: here is my authority for saying that it was. At a special

meeting of the Society, held in Baltimore, 25th March, 1850, Drs. WESTCOTT, TOWNSEND, and I. H. FOSTER were appointed a Committee to report on the propriety of rescinding the amalgam pledge. At Saratoga, in August, 1850 (the following appears in the *New York Dental Recorder*, vol. 5, page 69): "The Committee appointed at the called meeting in Baltimore to consider the propriety of rescinding the amalgam pledge, reported through their chairman, Dr. E. TOWNSEND, which report, after considerable discussion and recommittal for the purpose of amendment, was finally adopted, and the following resolution along with it:—

"*Resolved*—That the several resolutions adopted by the "Society of Dental Surgeons," at the annual meetings held 1845-46, having the effect of enforcing subscription to the protest and pledge against the use of amalgams and mineral paste fillings for teeth, be, and the same are, hereby rescinded and repealed."

Common sense has also repealed it: science peremptorily repeals such rubbish in her onward march.

Mr. B., cites resolutions passed in the dark ages of dentistry by the "Virginian Society of Surgeon Dentists" and the "Mississippi Valley Association of Dental Surgeons." Pray, who were they? and where are they now? "Down among the dead men."

My over-anxious opponent asks, "Is the Canadian Dental College prepared to say that the members of their kindred colleges in the United States are ignorant empirics?" That will not do, Mr. B. The Dental Colleges of the United States, as their reports show, do use amalgam, though discriminately; the Canadian College has not used it as it has happened; therefore Mr. BOWKER alone is the one who charges "the members of their kindred colleges in the United States with being ignorant empirics."

During a recent trip through the United States I met most of the very leading men in the dental colleges, associations, the journals, &c. and had especial opportunity of finding out the facts as to the use of amalgam. I found one bitter old gentlemen who wanted forth the ancient refrain against its use; but I also discovered that he never tried to save exposed pulps of teeth, and that in the great improvements in practice he had no faith or share. All unanimously advocate discrimination in its use; use of gold in preference wherever it can be used; but the old theories I found entirely exploded, and yet the very proper precaution prevailed not to extol it, lest it should lead to over-estimation. Professor ATKINSON, of New York—a very giant among giants in dentistry, whose excellence in operating, keen diagnostic and general scientific

attainments none can fairly dispute, and who frequently receives $50 and $100 for a single gold filling, and who, therefore, has every reason, were he selfish, to denounce amalgam—writes to me lately the following replies to questions:—

1. "Will not a properly prepared amalgam, properly inserted, preserve a healthy tooth?" *Answer, by Professor A.*—"Yes, as well as any other filling."

2. "Do you believe there is any possibility of ptyalism from amalgam in the teeth?" *Answer, by Professor A.*—"Nay, verily."

3. "Is amalgam not used by very eminent dentists for patients who cannot pay for gold, and for certain classes and conditions of decayed teeth which cannot be well filled with gold?" *Answer, by Professor A.*—"Yes, and by those of deserved eminence."

I can produce any quantity of such testimony from mostly all the leading dentists: one more will suffice for the present: it is from one of the keenest observers and rising men of the profession, Dr. S. P. CUTLER, Professor of Chemistry, Metallurgy, Microscopy, and Histology in the New Orleans Dental College. He says, "Undoubtedly I do think amalgam may not only be used, but with most decided benefit in a great many instances; where gold cannot be used I would use amalgam for permanent use. I have had several discussions with Dr. GEO. WATT on the subject of amalgam, and I always differed with him; his conclusions were not at all satisfactory to me. I have used amalgam for 25 years quite extensively, and never in any instance have I seen a single well-marked case of disease, either local or general, from its use in my own hands, or in any others. I have seen cases that have been attributed to its use, but without satisfactory evidence. I believe that good amalgam fillings in *badly decayed teeth*, thoroughly introduced and well finished after hardening, to be superior to any other filling, and will preserve such teeth much longer than gold or anything else, especially in back teeth. There are various reasons for the conclusions well-founded."

A dealer in dental materials in Ontario tells me that he has sold amalgam to nearly every dentist in Canada, though there are some dentists who deal elsewhere; he "sells to the best as well as the poorest. My sales in Canada amount to about 500 ounces per year." The largest dental depot in the world writes to me, Dec. 2, 1870: "We do sell amalgam to many of the leading practitioners in the United States; it is very extensively used by some of the profession, who, as contributors or editors of dental journals, professors in dental colleges, &c., are regarded as eminent dentists. Our sales amount to between 5,000 and 10,000 ounces per year." And it must be remembered that there are perhaps a score of dental depots in the United States.

Some of the leading dentists in the United States have recently introduced amalgams of their own composition to the profession.

The Dental Journals contain advertisements of amalgam recommended by leading dentists; and if the *Canada Dental Journal* does advertise amalgam, it is only what is what done by every other similar journal in the world, and Mr. B. must be very simple if he thinks a publisher would refuse any proper advertisement. He has raked up all the petty little things he can think of to strengthen his case, but they have only served to weaken it. He twists a quotation around and endeavours to make it appear that the words of another whom I quoted, are original with me, and says "As long as I have been a member of the profession, I was not aware that pure gold would become highly oxydized when used as plugs in the teeth, or would have any medicinal effects on the constitution," Who said it would? Neither I nor the writer whom I quoted. My quotation said, "With equal propriety it *might be urged* against gold, that, *because when highly oxydized* it becomes a powerful medicinal agent, therefore it should not be used as a filling for teeth." This was in connection with a refutation of the assumption that because there is mercury in amalgam, it must necessarily have a mercuralizing influence. Mr. B. has something now to learn about gold as well as silver, if he is not aware that gold can become oxydized; and that it can produce medicinal effects on the constitution. Is not the ter-chloride of gold a powerful irritant poison? And Mr. B. is not aware that there can be produced an oxide of gold! Did he never know that a preparation of gold muriate or chloride of gold has been used as an antisyphilitic, in obstinate scrofulous and cancerous glandular enlargements, exostoses, &c., and that it is rubbed on the tongue or gums?

In my last article I referred to JOHN TOMES, F.R.S., author of "Tomes Dental Surgery," &c., NASMYTH, well-known for his physiological investigations; SAUNDERS, dentist to Her Majesty; and other eminent English, German, French and American authors and practitioners; Professors PIERCE, BUCKINGHAM, McQUILLEN, FITCH, FLAGG, ALLEN, &c., all of them the very leading talent, and admittedly so. Mr. B. amuses me by asking the pompous question: "Are they practitioners of any high repute?" Perhaps the "American Journal of Dental Science," who does not know "who Mr. B. is" will answer his question. I should like to know who are practitioners of high repute, when we exclude such men as the above, and the host of eminent dentists, who hold the same views of amalgam.

I am sure that Mr. B.'s query will be a source of amusement to the

dental profession in general. Possibly he believes that as he—according to his own assertion—is the only skilful and honest Dentist in Canada, so the few extreme opponents of amalgam in the United States are the only intelligent ones left since the days of 1842.

Mr. B. says "I ask Mr. BEERS, "Are the physical conditions of the human frame different in 1870 from what they were in 1847? If the malpractice of amalgam was determined in 1847, what circumstances can possibly make its use sound and good practice in 1870?" Very easily answered. 1st. I am prepared to debate the former question in the affirmative, at any time. But allowing that they have not undergone any change, I would answer that the common sense and intelligence of 1870, such as shown by Dr. WESTCOTT, is infinitely in advance of 1847, and I pity him if he doubts it. But may I ask him to point out the divine law which made the dictum of 1847 binding on the generation of 1871; and if it was "determined in 1847" that there was no real hope of preserving an abscessed tooth, why we make efforts and succeed in saving them in 1871. Pshaw? such a question is only fit for a *habitant* to ask, who clings to his wooden plough, and his poor agricultural ideas, because his fathers taught him to do so.

How does the matter stand to-day? In favor of the discriminate use of amalgam, we have the very leading men in every country in the world; while on the other hand, they freely admit that gold is the best filling when it can be used to save the tooth. The opinion of John TOMES alone is worth ten times more than that of any prejudiced investigator in America or elsewhere.

I have one serious question to ask Mr. B., which, with the other points, I beg him not to evade. If, as he asserts, he has *always* considered the use of amalgam injurious, and has known in his thirty years practice that it was used, and even very much more used formerly than now, why he waited until the present organization and progressive movement of the dental profession in Canada—in which he shirked a share—to unburden his mind of his opinions? He had such a superabundance of conscientiousness all of a sudden, that he felt "it would be a violation both of duty and conscience to remain silent,"—*yet he remained so a quarter of a century*, and was impelled to come out as an "expositor of the abuses of dentistry," at the very nick of time when dental associations, a college, and a journal were vigorously working for education and reform.

One question more, and I have done with Mr. B.

The early writers against amalgam held the view that because there was mercury in it it was poisonous. Mr. B. quotes Dr. GEO. WATT and Dr. TAFT, of Cincinnatti extensively. Drs. WATT and TAFT say that

because there is mercury in amalgam it is poisonous. Mr. B. also says that the mercury in the compound is the reason it is poisonous.

Well, Dr. WATT says of red vulcanite, which is used as a base for artificial teeth, that because there is mercury in it, it is poisonous. Dr. Taft says it is poisonous. Now what about Mr. BOWKER? Oh! he has been using this very red vulcanite since its introduction, and though Drs. WATT and TAFT, who are so great authorities with him against amalgam say it is poisonous, and Prof. SILLIMAN says that one-third of the whole is sulphide of mercury, and though a host of dentists, chemists and physicians are running the rubber question in the United States just as amalgam was run in 1845, and though Drs. WATT, TAFT, &c., say it causes salivation, produces injurious constitutional effects, &c., yet Mr. BOWKER places it, not in the *bony* substance of a tooth, but covering the mucous membrane of the hard palate! And this tirade against red vulcanite "because there is mercury in it" is of 1870 and 71, not of 1845. Will Mr. BOWKER explain this remarkable inconsistency? Personally I do not believe that if the rubber is properly vulcanized, kept clean, and removed occasionally—as nature never intended the roof of the mouth to be covered with a foreign base—that it is injurious or poisonous; because before the mercury or sulphur can be set free the base must undergo decomposition. The opposition to its use in the States originated when the Goodyear Rubber Co. compelled dentists to pay an annual tax, and its principal opponents are those who have prepared substitutes to take its place, and which they are anxious to sell. But still there is sulphide of mercury in red vulcanite, and how does my opponent reconcile his opposition to amalgam, which keeps hard and perfect for years, with his use of a material which wears away in the mouth; and we know the sulphide of mercury used in the rubber is frequently adulterated with red lead, and bisulphide of arsenic—poisons which are soluble in the mouth.

In conclusion, I hold that if any dentist extracts every tooth he cannot fill with gold, and which can be filled with amalgam, he is guilty of gross injustice to his patients, and gross malpractice. This is the opinion of the leading dentists of the day, and while determining to use gold in every possible case, they are well aware of the risk incurred in extolling a filling so easily introduced as amalgam. There are "cheap dentists" who cannot use gold, and to whose souls a defence of any soft filling is a sweet consolation. I do not defend amalgam, or anything else in the hands of the "cheap dentists." But I know that they *may* make a permanent filling of amalgam, while I know that they cannot make one of gold. Not to mince the matter, the majority of the present extreme opponents of amal-

gam, are all old-fogy practitioners, who esteem their age and past reputation sufficient reason to dignify the most absurd assertions. The progress of dentistry never was much aided by their efforts, and never will be. They have fallen behind, and have failed to keep pace with that intelligence and freedom from prejudice, which characterize the men who *now* rank highest in the dental profession of every country in the world.

[Among the scores of opinions on Amalgam sent us by the leading men in the profession, we value the following from the pen of one of widely recognized ability. Though written very hastely and not exactly for publication, it evinces something deeper than second-hand assumption.]

My Dear Sir,—Your favour of 22 prox. came to hand day before yesterday.

I have been experimenting since yesterday morning on amalgams. First, I put into nitric acid one part to four of water, a lump of hard amalgam; second, hydrochloric acid one part to two of water; third, sulphuric acid one part to two; fourth, strong vinegar. A lump of dry amalgam has remained in each since yesterday, the only effect noticeable in either is a slight action of the nitric acid, darkening slightly the surface, without any perceptible change; none of the others have underwent any perceptible change, but remain clear and white.

Now any of these preparations are sufficiently strong to act with energy on teeth in the same length of time, and any of these acids would if retained in the mouth any length of time, excoriate the entire mucous surfaces. Good amalgams are composed of pure tin and silver, and amalgamated with pure mercury. Water does not decompose mercury silver or tin to any perceptible extent. Nitric acid dilute acts on silver, also mercury separately and less so on tin. Heat facilitating the action when the three are combined, as in amalgam, the acid action is greatly lessened. I do not believe that any action of the fluids of the mouth is sufficient to produce any mercurial salt capable of acting injuriously to the slightest extent, even in cases that have been repeatedly salivated by taking mercurials; if so, I have never witnessed a case during thirty-two years professional observation.

I have seen a filling but a short time since, made of silver filings and mercury, that had been in a lower bicuspid twenty-five years, the filling being perfectly sound and the tooth all round except near the gum where a cavity below had nearly reached the filling. This filling was very dark on the surface, but on running a file over it slightly it gave a pure sound white surface, in consequence I left the filling in and filled

below it. This dark surface was the result of the silver oxidizing slightly.

Remove any amalgam filling from any tooth and file the surface, and the filed portion will become white and metallic. In order to get protoxide of mercury, which is the only one of consequence, mercury must be heated up to 600 degrees with free access of air, then red precipitate is formed, which is the protoxide, and on raising the heat higher, this oxide is again decomposed into the simple elements.

To form calomel, which is a sub-chloride, subnitrate of mercury is precipitated by common salt; it is also formed by other processes. Protochloride of mercury, or corrosive sublimate, may be made in several ways. When metallic mercury is heated in chlorine gas it takes fire and burns, producing this salt.

From the above formulas it will be seen that mercury is not readily acted upon by any fluids that may exist in the mouth, as these fluids always contain at least from 800 to 900 parts of water in 1000 parts, so that any acid or any other agent contained in this fluid could absolutely have no action of any moment; neither in tin or silver; the latter turns dark from an oxide being formed in some mouths much more readily than in others; some mouths scarcely acting on a silver plate at all. Youman says that mercury slowly vaporises at all temperatures above 40 degrees; some say all temperatures above 66. The vaporisation goes on more rapidly as the temperature is raised up to the point of ebullition 662.

All the apprehension that need give us any concern in connection with amalgam fillings is the vaporisation during the process of hardening, some of which undoubtedly will be inhaled into the lungs, as this vapor must be lighter than air or it could not be a vapor at all. The amount that might be inhaled would be so insignificant that it would not do any mischief, as it would be carried out of the lungs again even if it passed the entire rounds of the circulation.

Workers in-quick silver are short-lived, owing to the fact that they are constantly in an atmosphere charged with these vapors, which no doubt keep their systems saturated during their working hours, which in a few causes a total lesion of nutrition, the hair and nails fall off, the hard tissues become saturated; the periostium fails to nourish the bones, and the poor wretches die from exhaustion.

The insignificant amount of this vapor escaping from a fine amalgam filling could produced no injurious effect. The vapor will salivate when sufficient has been inhaled, which is the first effect of allmost all forms of mercury, however introduced into the system. Mercury in its action is

an irritating stimulant, to the glands more especially, the liver primarily, the oral secondarily.

March 31.—All the specimens have now been in the acids 48 hours; none of them are in the least affected, except that in the nitric acid, which is nearly all decomposed, with some precipitate of tin I suppose, at the bottom. It will be seen that in 24 hours there was scarcely any action at all by the nitric acid, and now none at all by any action of the other acids.

I think these conclusions are sustained by demonstrable facts as given above.

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New Orleans.

CANADA

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ORIGINAL COMMUNICATIONS.

PRESERVING DECAYED TEETH BY FILLING.

BY L. D. S., TORONTO.

A consideration of the subject of this paper has been suggested by the instances which, almost daily, come under notice,in which the dentist has from some cause failed in what has been considered the specific mission of dentistry, viz :—preserving decayed teeth by filling.

This failure does not, by any means, always arise from the same cause, but from many and widely differing causes.

In many cases doubtless from want of skill in the operator. In other cases the failure is induced by the patients themselves, in refusing to submit to so thorough an operation as was essential to success on account of the suffering necessary to be endured. In a large number of cases failure results from inattention to proper cleanliness after an excellent filling has been inserted. Others are undoubtedly due to hygienic and physiological causes, to a great extent beyond the control of either patient or dentist. To all, or any, of these causes of failure it is not now our intention to revert. The cases which claim our present attention are those which are manifestly due not to a lack of mechanical skill, but to an entire want of apprehension of the theories which underlie successful conservative dentistry, or a criminal negligence in carrying them into practice.

A Surgeon called upon to treat the most serious lacerations, cuts, or bruises, of the soft tissues, if the lesion does not necessitate the entire removal of the part, only requires to re-adjust the wounded tissues as nearly as possible to their normal relations, and guard against any undue inflammation—nature does the rest and restores the parts to a healthy condition. Not so, however, with the Dental surgeon in the accidents and diseases which he is required to treat. The work of restraining destructive action and restoring lost parts devolves wholly on the operator—nature in his case gives no assistance.

Upon his thorough understanding of the causes of caries, and the various influences which combine to produce and extend them, will very largely depend his success in the efforts to preserve decayed teeth. It is now, we presume, generally admitted that neither what is known as the "vital theory" nor what is termed the "chemical theory" of caries is of itself sufficient to account for all the phenomena which are manifested in decaying teeth. Scientific men are agreed that both chemical action and diminished vitality are in most cases necessary to the production of caries, and consequently hold as correct the "chemico-vital" theory.

For the purposes of this paper it will be sufficient to assume 1st, That in a mouth where the fluids are normal and the teeth perfectly formed, and in a hygenic condition decay *never* takes place—in other words that nature designed that the teeth should remain perfect during life.

2nd. That where decay occurs there is always present vitiated fluid acting chemically upon teeth naturally imperfect, or made so by accident, or in which from some cause the normal vitality has been lowered.

Decay occurring from natural defect in the calcification of the enamel, is found principally on the grinding surface of molars and bicuspids and on the lingual surface of the superior incisors and laterals. Decay predisposed by loss of vitality may occur on any portion of a tooth, but most commonly occurs on the proximate surfaces.

It is generally taught that teeth are more liable to decay on the proximate surfaces, from the fact that particles of food are there retained and decomposed.

A careful observation will, we think, show that there is another and perhaps equally potent cause for the decay so frequently met with. We find that, other things being equal, the more tightly teeth are wedged together, and consequently the less space for food to lodge and decom-

pose, the more liable, we might almost say, the more certain they are to decay. And why?

We account for it on the theory that partial devitalization is either general or local. The former occurs in sympathy with an impaired condition of the vital force of the system, generally, as during, or after a prostrating illness. The latter is produced by pressure. In some way which, it is true, we cannot explain, but which observation nevertheless teaches us to be true, where teeth are firmly pressed together, a local devitalization of the enamel at the point of contact occurs which renders it pervious to the chemical action of the fluids of the mouth, and caries is the result. So much for our theory of carious teeth. How does dental science propose to effect a permanent cure?

1st. By arresting the decay at the point at which it has arrived.

2nd. By removing as far as possible the predisposing causes. Unfortunately the exciting and active cause, "vitiated oral fluids," is rarely within our control.

In those cases where decay has arisen from defects in calcification this is comparatively easy. The decay has obliterated predisposing causes, and it is only necessary thoroughly to remove all partially decalcified tooth tissue, and replace it with an indistructable filling of gold or other material. We cannot, however, too strongly impress upon young operators the necessity for thoroughness in excavating cavities in the grinding surfaces of molars. Very frequently, apparently fine fillings prove in a a few months miserable failures, from the fact that decay extending from minute-fissures in the sulci of the teeth has been allowed to remain when the main cavity was filled.

In those cases where there is a marked deficiency of ability in the enamel of the teeth to resist chemical action, the best we can do is to insert as perfect a filling as possible, insist upon great attention to cleanliness, and advise such regimen or medical treatment as would seem to be favourable to a better condition of the teeth and fluids of the mouth, without being over sanguine in promising good results or holding ourselves for the failure of our operations.

It is in cavities occurring on the proximate surfaces of bicuspids and molars that by far the largest proportion of failures occur from inefficient treatment.

Two methods have been in practice in this country; one to make with a V shaped file a free opening between the teeth, wide at the cutting edge

and tapering to the cervical wall of the cavity—then filling the cavity flush with the walls thus formed.

The other has been to separate with a wedge or flat file, or both, and then removing as little as possible of the over-hanging comparatively sound enamel, to fill from the approximal surface and trim off flush with the veritical wall formed by the file. There are very strong objections to both these styles. In the first not only is the appearance of the teeth rendered unsightly, and an opening left which gives great annoyance in mastication, but the teeth will come in contact at precisely that point where the enamel is thinnest and least capable of resistance, and when in most cases it is further weakened by the cavity extending behind it, leaving but a thin wall intact. Under these circumstances further decay at this point sooner or later is inevitable. In the other the antagonizing surfaces of the teeth, with the fillings inserted being scientifically "trued up" with the file, approach each other and come together with a "perfect fit" over their whole surface. What is the consequence? Instead of a single point of contact, whence the decay originally spread, we have now the whole margin of the partially devitalized enamel surrounding the fillings in contact, under circumstances the most favorable for further decay, and the most perfectly inserted filling must in a comparatively short time become loosened and the cavity very naturally enlarged.

In some cases, it is true, that either from the extent of the separation or from a peculiarity of occlusion, the teeth thus filled do not come together. In these cases when the excavation has been thorough, and the filling skilfully inserted, the operation is durable, the only drawback being, that the opening thus formed between the teeth is a never ending source of annoyance to the patient, from the facility with which particles of food become lodged in it, giving pain and discomfort by their pressure on the gum.

The question arises how can a more hopeful operation be performed? We think by an essentially different course of practice. Accepting as true the theory advised by Dr. Garretson that the mucous membrane covering the primitive dental papillæ in a modified form, continues to exist after the teeth are fully formed between the enamel and the dentine, and that it is through this membrane that the enamel receives the nourishment which is conveyed from the pulp through the dental tubules, it follows that enamel deprived of the subjacent dentine and of course of its nutrient membrane, by caries, becomes exceedingly

brittle, the brittleness increasing as you recede from the intact dentine. From this view of the case we consider it desirable to cut away on all sides of the cavity all over-hanging enamel, after having separated with wedge or other appliance when necessary. Secure the future stability of the filling by cutting retaining groves in the dentine, and for this purpose, even when the cavity is small, cut down from the grinding surface of the tooth. Introduce the filling from the grinding surface and in such a manner that when finished smoothly with a convex surface it shall present as nearly as possible the original *size* and form of the tooth. When the teeth come together the point of contract is where nature placed it, extending from nearly the grinding surface from one half to one third the length of the crown of the tooth. The substances in contact are the indestructable filling. The margins of the cavity are of strong, vital, enamel and are in the most favorable conditions for cleanliness. By thus treating this class of cavities we think we can arrest the decay, and at the same time remove its predisposing cause with the best prospect of permanent success.

We do not ask any one to accept our theory or adopt our practice. We shall be quite satisfied if the suggestions thrown out induce such reflecion and discussion as shall add something to our knowledge of Dental Science.

CONSERVATIVE DENTISTRY.

BY OLIVER MARTIN, L.D.S., OTTAWA.

It is customary for the majority of dentists to extract the roots of teeth, either because they are the cause of pain, or for the insertion of artificial teeth; for it is thought by many operators that artificial teeth cannot properly be inserted over roots, and that suppurating roots cannot be cured; at least, that neither can be successfully performed. I will try to point out the usefulness of roots when properly treated; for, as a rule, most of them can be saved for many years, with great advantage to the patient, and credit to the dentist. In the extraction of roots more of the alveolar process is cut away in one moment than would take one year for natural absorption to remove; the deep socket left after the extraction of

a root is another cause of rapid absorption, leaving a deep depression between the two adjoining teeth, and depriving them of their natural support, so that in course of time we find the lateral surface of their roots denuded of bone,and especially when the antagonizing teeth come on the opposite cusps from the space, we find the teeth moved towards each other, often so that the lateral surface of their crowns come together, forming a shaped opening, a sure receptacle for tartar, which also causes absorption of the bony structure, and often to the apex of the roots; in fact it is not unfrequent to see the roots of teeth quite bare of bone on the side where teeth, or the roots of teeth, have been extracted; this is sufficient to show the important relation of one tooth to another, or the roots of a tooth to the two adjoining teeth. When roots have been rendered healthy and properly filled they will last for a very long time. To illustrate I will take one case of the many that have come under my observation. A gentleman for whom I had treated and filled eight roots, wearing a gold plate with teeth over them, in thirteen years, two were lost by gradual wasting away, so that he removed the small portion left with his pen-knife, the remaining six are still doing good service, and he has never had the least trouble from them. Let us now consider what this patient has gained; first, he did not suffer the excruciating pain of having them extracted when firmly embedded in their sockets; second,they kept the jaw and gums in their proper position, which is much to be desired, especially in wearing artificial teeth, as no teeth look more natural than plain teeth well fitted to the natural roots; third, roots are great distributors of force, and also prevent much of the absorption of the alveolar process caused by the constant pressure of plates; fourth, plates will retain their nice adaptation for a much longer time, because the mouth changes but very slowly; and very frequently when artificial teeth have not been worn for a short time, owing to illness, or other causes, they cannot be replaced without an alteration owing to the teeth having moved one way or another. This does not take place when the roots are there to support them. Fifth, the filling or building up process is much greater when roots are retained in the jaw until they waste away, than when extracted, leaving a more prominent alveolar border which is more favourable to the wearing of artificial teeth. And again if we consider the loss of expression caused by the extraction of roots, especially those of the canine teeth, which no artificial teeth can restore; the loss of the natural gums, which no artificial gums can replace; the loosening and falling out of sound teeth because they have been deprived of their sup-

port, this should make us more appreciative of their value, and careful in their treatment. You will receive the thanks of your patients for freeing them from the dread and pain of having roots extracted, and with liberal remuneration for your services; you will also find that the use of gas, chloroform, or any other anæsthetic, will be but seldom needed, lessening in a great degree the accidents that too often take place by their use.

As a rule roots should not be extracted, but all rules have their exceptions; these are, first, when the patient is young, and the teeth over-crowded, then the judicious extraction of roots relieves the over-crowded arch; second, when roots have lost their living attachment and are only held by soft parts; third, when roots are split or divided beyond the alveolar border; fourth, roots that have their canal so enlarged, and the walls so thin that at points there are openings in the socket; fifth, enlargement of the roots, or nodular formation; these are the principal causes for extraction of roots. Apart from the first two mentioned,—that is the over-crowded teeth in the young, and the loss of bony structure in the aged, both are of rare occurrence. It is evident then that the most frequent cause of pain from roots is inflammation of the periosteum, caused by the decomposition of matter in the nerve canal, generally resulting in alveolar abscess. How fortunate that the most frequent cause of trouble should be the easiest to control. The extraction of roots, like the extraction of teeth with dead pulps, should be considered as something of the past and be forever buried in oblivion.

CAN PULPS OF TEETH BE SAVED?

BY FOSTER ELWELL, L.D.S.

The above query might be enlarged to the extent of an elaborate essay, but my object is not to elaborate, but to be pointed. Following the question comes the replies—dependent upon the condition of the pulp, the constitutional character of the patient, the method of procedure. I may dispose of these and my own experience by simply saying that I attempt the salvation of every pulp which has never given more than a recent temporary pain; but that while trying to save about forty per cent. of others, I never hope for success in more than ten per cent. of

these. I think it unscientific and folly at best to attempt the salvation of pulps which have been inflamed and *violently painful* for a day or two. There are constitutional conditions when everything tells against the conservative treatment when we have to succumb to circumstances and kill the part. I doubt if in a system under the influence of inflammatory diseases, a painful pulp can be saved. I doubt if we can hope for success where the system is under the influence of mercury.

I think it mal-practice to destroy a recently exposed pulp, or a painless pulp at all. I do not believe in prolonged therapeutic treatment. Carbolic acid left over a pulp too long becomes an irritant. I like to remove all decay—apply rubber dam; gently touch the exposed pulp with carbolic acid and leave it there for five minutes, then remove, dry it thoroughly: warm a thin slice of Hill's stopping, lay it gently over the exposed pulp, then having your Osteoplastic ready slightly warm the first piece, lay it over the stopping and then add more unwarmed, pressing bibulous paper upon the filling to absorb the superfluous acid.

Where the pulp has been recently exposed I insert gold or amalgam filling as soon as I can cut into the osteoplastic. Where the pulp has been exposed for some time and painful, I delay the permanent filling.

A CANADIAN DENTIST IN MEXICO.

BY J. W. BASTOW,

MAZATLAN, SINALOA, MEXICO.

Although domiciled in the land of the Aztecs, it is with pleasure I read a notice of the re-issue of the "Canada Journal of Dental Science" for the current year. I regret very much that the profession in Canada, with outside auxilaries, were not more interested in sustaining it in the past, and trust that they may now come forward and lend you the necessary assistance to enable you to continue the publication in Canada of a journal devoted to Dental Science. I would be pleased to have you put my name on your list of subscribers so long as the journal is issued; deeming it the duty of every Canadian Dentist in particular to maintain the honor and progress of the profession in his native country. Dentistry in Mexico is but little appreciated. I have published

in Spanish a summary on "the teeth and how to save them," and present it to my patients with the idea of educating them to the importance of the preservation of the dental organs, the necessity of saving deciduous teeth, their allotted period, the evil effects resulting from accumulation of salivary calculus and other matters relative to the eruption, etc. It is the first treatise of the kind that I have known to be printed in Spanish, with the object of conveying to the public instructions on the teeth, and have no doubt but that the seed dropped by the way-side will eventually bring forth fruit to be enjoyed equally by the patient and the profession.

I have found, in 16 months practice, that those persons in whom the type of the Indian is dominant, (i. e. among the mixed races) universally have their dental organs in a good state of preservation, of large medium size and very regular, but the nearer they approach the Spanish stock, proportionately I find a deterioration from the normal state. The lowest state of perfectness is met with among the younger generation of Spaniards. I attribute the superiority of the teeth of those in whom the Indian blood is dominant, partly through inheritance, but principally from their food of corn, beans and beef; these three articles forming the staple of their subsistence. From neglect in cleanliness combined with (I presume) the extra amount of phosphates of lime taken in the food of those in medium or more humble circumstances, I have observed very great numbers with heavy deposits of white or cream colored tartar on the lower incisors. You would be surprised at the large per centage of my plate work in favor of replacing the lower dentures, without exception all caused by accumulation of tartar, resulting in a complete loosening of those organs through the denudation of the teeth from the gums and absorption of the alveolar process. I have also noticed, in those persons of but little or no Indian blood, many cases of atrophy on the anterior surfaces of the superior incisors and occasionally on the superior and inferior cuspids, but whether it is caused by a constitutional disturbance obstructing the assimilation previous to eruption of the material elaborated for its construction, or by subsequent chemical effects, I am unable to say. In some of the cases where the tooth structure has been undoubtedly weak considerable caries has been the result, notwithstanding which, it has surprised me to find in the same mouths that horny production which appears to almost arrest caries, at least considerably retard its progress.

A CANADIAN DENTIST IN GERMANY.

BY WM. R. PATTON, D.D.S., COLOGNE, GERMANY.

Through some years experience of dentistry in a German centre, a few observations on the practice of our profession may not prove totally uninteresting to some of your readers--for among the very large majority of those with whom I came in contact during my last visit to the States and Canada, a decided lack of knowledge was shown relative to Continental practice and theory, combined with as decided a thirst for information.—Our Continental colleagues do not stand so high in regard to operative work as the representatives of our specialty on the other side of the Atlantic, and this may be easily accounted for by the want of practical study in such institutions, devoted solely to that purpose, as the American colleges offer to the dental aspirant.

Until but lately, comparatively speaking, the German dentist has been struggling against the same disadvantages that the Americans suffered many years ago. viz : the acquiring of the knowledge they sought for, through the office business of some practitioners in the capacity of drudge or assis tant, a knowledge charily imparted through vague fears of later competition, being his only means of advancement.

Notwithstanding the foundation during the last few years of dental chairs in Berlin and Leipsig etc. they are proved to be more theoretical than practical, and there is a general feeling, which is now expressing itself from the leading class of the profession, for improvement.

General convocations of dentists, provincial and local, take place mostly yearly, in the American style, when dental subjects are discussed.

That a precedence is taken by American dentists on the continent, could be practically shown by naming the leading practitioners in most cities of large population : however as it is not my intention to give cause for rival comparison I will rigidly abstain from any thing verging on personality, merely observing in the interest of the profession—that dentistry on the Continent as represented by Americans, can claim the highest practical intelligence—also that there are native Continental practitioners whose writings as well as researches in the dental field have made their names known not only to Europe but America.

Referring to what I have remarked about the general lack of dental education on the Continent, I must in justice say that an annual increase occurs in the number of those who visit America from these shores in search of improvement, and who on their return seldom fail to meet with a just appreciation of their merits.

I am sorry to state however that the larger number remain but for one course, and having picked up somewhat at the practical manipulation, do not thoroughly perfect themselves, but return to compete on a firmer groundwork with the colleague who has not been capable of the same advantages.

American dentistry is represented as a body by the *American Dental Society of Europe* the last meeting of which was held in Paris. Through absence, (being then in Canada) I cannot give you an account of that convention. The topics treated however, are of the same standard and general character of those discussed at similar assemblages in the United States ; for example the list of essays for this summer embrace.

(1) Irregularities of the Teeth, causes and treatment.

(2) Cause of " " " "

(3) Is it desirable to separate Operative and Mechanical Dentistry ?

(4) National types of teeth.

(5) What materials are best for filling and preserving the teeth between the ages of twelve and fourteen ?

I hope to render you a good account of European opinion on these subjects.

As far as Germany is concerned the profession is represented by various societies :

Central Verein Deutscher Zahnärzte—

Gesellschaft Berliner Zahnärzte—

also societies in Frankfort a Main—Austria and Schleswig Holstein.—there hold their meetings I believe annually. The American dentist excels in operating over his Continental colleague for the reasons mentioned, but as mechanical workmen they can fully compete with their American brethern. I have seen plate work of the highest standard, that had been in use for years, and showing skill equal to that of more modern date.

Still rubber has, as in the States, worked its evil influences upon the character of mechanical dentistry, and plate work (gold etc) by the many,

may be considered a lost art—rubber, rubber, whole sets and partial, is the order of the day and at prices equal to the $8.00 sets of the celebrated American avenue men, and the reasons therefor are the same as those which cast a slur on the profession, even in the land of its fruition the competition of merely mechanical men, who offer the public by every means in their power, swindling advertisements, etc., the benefits of cheap dentistry.

Fillings are made with Gold, Tin, Amalgam and the plastic preparations, the two latter being used to an excessive degree, and consequent detriment of many organs, capable of being well preserved through nobler manipulation.

Practical education is not alone necessary for the majority of German dentists, but also for the patients who are not universally elevated to the proper appreciation of artistic dentistry, who accustomed to submit to an operation which may necessarily occupy from one to three hours duration and finally reward with a corresponding remuneration ; the only exceptions being the highest circle of society who really do take an interest in conservative dentistry. American dentistry has to struggle against the evil effect of cheap and consequently quick and imperfect work, the victimised becoming obstinate disbelievers in the worth of operative work, until the prejudice has been fairly eradicated by the lasting influences of some good conservative practitioner. Amalgam plays the greatest role amongst filling materials, and no wonder, for when the large majority are not educated to a proper remuneration the class of work must correspondingly balance the scale.

American dentists as educated operators receive the highest return for their labor, and are really appreciated when once their name and worth are known and spread through their abilities. That there are native professional men of the highest capacity, whose services are highly thought of there is no doubt, but they are in a minority to those, whose operations are not worth the small fees paid for them.

That the great question of dental education is causing thought in Europe as well as in America the following article will prove to your readers—and probably will give a better idea of dentistry in Germany—than anything I could indite ; for published in the German quarterly, edited by Dr. RobBaume of Berlin—the organ of the Central German Society, it is a thoroughly German expression. I will translate as literally as possible.

THE DENTAL TUITION QUESTION.—*By Dr. G. von Langsdorff.*—It is exhilirating to read, how on this and the other side of the ocean the question of elevating our dental standing, through bringing up qualified—that means theoretically practical educated Dentists, has become a subject for general earnest counsel.

For example, it is very easily said ; *Only proper and able schools of culture meet our aim— or a gymnasial education as a ground work must be present ; —or Dental surgery must be practised before all as a specialty ;—or a dental candidate must be as fully capable of passing his medical and surgical examinations as his dental";* and such like.

By reading and after thought over all there remain various propositions. I have formed by degrees the following code for dental education, which I now place before my readers.

I believe I can make my opinion clearest, when I undertake to throw light on the education question from *negative and positive* sides.

(1) The negative side—that is how Dentists should not be brought up, is now-a-days undoubtedly the universal method.

We can presume that we have in Germany at least a thousand practitioners, officiating as Dentists, that is carrying out the duties that can be claimed from a regular Dentist. Where have the majority of these thousand received their education ? Answer : Through having been one or more years with Dentists who for some few hundred shillings have taught them the most needful of that they themselves know.

Or, they are those who having worked here and there as Mechanics for Dentists, have gradually flattered themselves into the belief of their capability to practise self dependently the same business. Through power of the law which gives liberty of exercising any craft, (Gewerbe freiheit) they are allowed to make artificial sets ; and as they stand under no control whatever so they extract and fill teeth and perform all other oral operations, as if they were *qualified Dentists*—with the only difference that they do not call themselves *Dentists*—but * *Tooth mechanists—Tooth practitioners—Tooth artists—Technical dentist* so forth. This is then the class of " colleagues " through whom our calling is so much discredited : for these persons spoil and extract more teeth than they can ever be answerable for.

* Tahntechniker—Tahnpractikant—Tahnkinstler—Techniker Tahnarz" etc.

Or, there are Barber surgeons — Chemists — Apothecaries.—Watchmakers—Goldsmiths and other tradesmen who appropriate so far as they consider needful the technical work, * then practise every thing connected with the dental department. Solitary cases where persons have raised themselves through innate energy and assiduity must be regarded as exceptional.

Or again, there are medical students and even medical men who all at once get the idea into their heads to practise dentistry.—To make a rubber set of Teeth is soon learnt and that accomplished, they flatter themselves they are first-class dentists. They are probably not in a position to faultlessly perform the simplest gold filling and yet they condescendingly look down on their other colleagues, write themselves † Dr. of medicine—Medical practitioner and Dental practitioner—often with the addition Professor or Teacher and Examiner ; although they hardly have a conception of the different diseases of the Teeth nor what remedies to have recourse to.

Many a one, through need, qualifies himself by reading practical and instructive guides or impelled by native integrity seeks good counsel from Dentists of known reputation but the wished for information is either not imparted in the proper manner, or so miserably and unmethodically that they comparatively, become only competent through their own energy and industry.

The main point however, *the preservation of the Teeth* through solid and lasting fillings, one can only learn under a *capable instructor*, to be perfected by the opportunities of practise.

If I could show the letters I receive, which ever increase in number, as examples (and I am sure I must consider them as such), it grieves me sorely that our schools for instruction fail in assisting such active assiduity. I have indeed on three occasions, when the parties had advanced to the second class in the gymnasium, accepted such as pupils ; but when they had learned how to treat painful Teeth and then fill them with the different materials employed to extirpate a nerve—to extract Teeth—to adjust Pivot Teeth—to take impressions and make Rubber work etc., yet I have mentally felt that of *fundamental solidity*

* Dr. med—Praktischer Arzt. Praktischer Tahnarzt.

† In the German titles of Dr. they general precede the work Arzt with praklisch—meaning practising his profession.

there could be no question, for Anatomy, Physiology, Analytic Enquiry and Microscopy could only be conversationally dwelt on and that without any preceding preparation.—It was imperfect, just piece work.

Fundamental solidity can only be acquired at an education al institution where the various branches can be inculcated *theoretically and pratically*, by teachers who have devoted their time to the study of their particular departments.

We have, it is true, in Germany dental teachers, but no proper Institutions where a dentist can be theoretically and practically educated.

It is therefore for this reason that he who has the stimulus to accomplish something as a Dental practitioner, spares neither the time nor money necessary,—to receive in one of the eleven Dental Colleges of the United States, the educational culture he lacks. I know this, for I have frequently been applied to by such energetic young colleagues for letters of introduction.

Who will not find in these facts the surest evidence that our German Dental Schools cannot satiate that thirst for knowledge which the dental candidate expects ? The majority even of these return after a half years sojourn at an American Dental College * (mostly at the Philadelphia Dental College) as *perfect dental operators*, for treating diseases of the teeth as well as filling them with gold.

(2) The *positive side* of how to bring up Dentists, I find much more difficult to treat, for even in America, the land of dental nurseries, the Reformers have not as yet discovered the vital means of reaching their desires. Still the question should meet with an easier solution in Germany, as our excellent preparatory schools viz the Gymnasial, endows each with a well filled school bag that fits him for universal education, which is not the case in America, where many aspirants for medical as well as dental diplomas cannot even write correctly their own mother tongue.

Consequently, with us, Jewelers, Watch makers and such tradesmen should only be permitted to enter a dental educational institution when through attendance at a Gymnasium, (high school) they by the study of Latin could prove a scientifical ground work.

To adhere to this in all cases might prove for one aspirant or another very inconvenient, but, a rule must exist and exceptions to every rule are admissable.

* Notice that this verifies my statement in the commencement of this paper. W. R. P.

That the code of a *scientific ground work* must be adhered to is proven by the facts—that the best works written on general and special subjects of Dental science do not emanate from the Mechanical dentists, etc. but principally from qualified Dentists and then medical men and surgeons, with fundamental medical education.—It consequently follows that, a *foundational, scientifical, medical education is beyond every thing necessary, if we wish to be regarded not as superficial but as Dentists of sterling worth.*

But a farther important question is the following. Is one, who as a Dentist can write a very scientific production, also a practical Dentist ? No. For he may not understand how to perform lasting operations through proper solid fillings.

He who wishes to gain celebrity as a Dental practitioner, must add to his scientific knowledge, the manipulation and dexterous skill necessary to make faultless Gold fillings, otherwise he will ruin more teeth than he can conscientiously answer for, and does not earn the right to call himself a Dental practitioner—but to learn this ; before all, comes the need of, *establishing independent practical educational institutions for Dentists ;* —where able technical instruction, necessary to the proper manipulation of difficult cavities, can be imparted. The large number of enquiries, that I receive, in which honorable practitioners admit their lack of skill and pray to be informed where and how the defect can be remedied, is to me the best proof that in none of our existing German schools, wherein lectures on " *all departments of Dentistry* " are held, do we possess the proper instructors for Operative work or filling Teeth. What avails the person who wishes to educate himself for practise, that he has so thoroughly studied the Anatomy, Physiology Microscopy and Therapeutics of the Teeth, so as to teach and write books on these branches; when it becomes the question of preserving a painful, carious tooth, knows naught but how to apply a palliative remedy —order a leech— pressing a gutta-percha or amalgam filling, or extract that which treated by an able practitioner could be probably still retained for 10 to 20 years. Our *dental specialty* embraces such an extensive field that in establishing an Institution, six professors at, the very least are absolutely necessary."

The writer then advances the branches necessary and what apertains to the department of each chair, which results in :

1 Anatomy and Physiology.
2 Chemistry and Metallurgy.
3 Dental Pathology and Therapeutics.

4 General and Oral Surgery
5 Practical course of Operative Dentistry.
6 Mechanical Dentistry,

in their varied relations to general practice, dwelling on the advantages of clinical demonstration—in fact the curriculum is similar to that of the U. S. Dental colleges—if any thing embracing a wider field. This is to be preceded by what we would term a high school education—would suffice for a commencement and be sure to bear good fruit ; but he would not stop here. Later when the system would be firmly established, higher ground still should be taken and the candidate be required to be an M. D. before he became a D. D. S.—He then dives into ways and means, favoring connections with medical colleges, for the beginning. I have given the pith of his words, which express the feelings of the educated Dentist of Europe. Progress is up in arms, and let us hope, that the strong hand of education may speedily stamp out the evil effects of charlatanism.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

QUESTIONS PROPOSED AT THE EXAMINATION, MARCH 1877.

Anatomy.—H. J. Wood, L.D.S., Examiner.

1. Describe the interarticular fibro-cartilage of the temporo-maxillary articulation.
2. Describe the actions of the several muscles of mastication on the inferior maxillary bone.
3. Give the origin, distribution and function of the lingual or gustatory nerve.
4. Describe the internal surface of the occipital bone.
5. Mention the branches of the internal maxillary artery, given off in the spheno maxillary fossa and their distribution.

Dental Surgery.—L. Teskey, M.D., L.D.S., Examiner.

1. Neuralgia; give the causes and symptoms. Mention other painful affections for which you might mistake it and how you would distinguish them.
2. Ranula; describe it, give its diagnosis and treatment.
3. What would lead you to suppose that an ulcer in the mouth was syphilitic?
4. What would lead you to suppose a tumor in the mouth was cancerous?
5. Mention the causes of the hemorrhagic diatheses; what would lead you to suppose it existed in a patient? How would you treat hemorrhage occuring from an operation on such a patient?

Physiology and Dental Histology.— C. S. Chittenden, D.D.S., L.D.S., Examiner.

1. Describe the circulation of the blood, beginning at the right auricle.
2. Describe the fluids assisting in digestion, their sources and functions.
3. Classify the elements of the blood and explain each.
4. Name the substances of the third class of proximate principles and mention some properties peculiar to them.
5. Describe the minute anatomy of an incisor tooth.

Operative Dentistry.—F. G. Callendar, L.D.S., Examiner.

1. Give the origin, manner of deposition and characteristics of salivary calculus; give the cause of "green stain," and state how each affect the teeth, gums, alveolus, and general health.
2. State your opinion of the causes, conditions and agents producing Dental Caries and how they affect tooth tissue.
3. State how you would treat Dental Caries in each of the following pathological conditions, respectively, viz:—
   1. When pulp recently exposed.
   2. " " inflamed, from exposure, involving the periosteum.
   3. " " partially devitalized.
   4. " " is putrescent.

4. How would you treat alveolar abscess?
   1st. When no fistulous opening exists.
   2nd. When such an opening has been found.
5. Name the materials used in filling teeth. State the conditions when each may be used, and why, and describe the essential points in the preparation of a cavity and in filling for a successful preservation of the tooth.

Dental Pathology and Therapeutics.—J. B. Willmott, D.D.S., M.D.S., Examiner.

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1. From what several causes may we have odontalgia? Give the diagnosis in each case.
2. In the case of a Dental Pulp exposed by caries when would you consider the prognosis favourable for the operation of capping?
3. Explain *when* and *how* a "cold" may be an exciting case of odontalgia.
4. Give the history of alveolar Abscess.
5. Give the source, general properties, preparations, therapeutical action and legitimate use in dental practice of Zinc Chloride, Iodine, Tannic Acid, Creasote.

Chemistry.—C. P. Lennox, L.D.S., Examiner.

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1. Explain the terms "Quantivalence," "Acidulous Radicle," "Reagent,' "Hydrate," "Anhydride."
2. Write formulaes representing the several mineral constituents of the teeth and state the sources whence they are obtained.
3. Give the offices of a chemical symbol, also those of a chemical formulae.
4. Describe the process of the manufacture of Ammonium Nitrate; give an equation shewing the reaction, and state how many pounds of Nitrous oxide will be formed by the decomposition of 50 lbs. Ammonium Nitrate.
5. Describe the element potassium—the principal source—manner of isolation from its compounds.
   State how the following salts may be prepared and give equations and formulas, viz:—
   Potassium Hydrate, Potassium Bicarbonate, Potassium Iodide.

Mechanical Dentistry.—A. Pearson, L.D.S., Examiner.

1. In preparing a mouth for an artificial denture, what, as a general rule, would be your practice.
2. What accidents are liable to occur in extracting teeth? How would you avoid them?
3. State the consideration which would guide you in the selection of a set of artificial teeth for any given patient.
4. Give the composition of Red Vulcanite, the objections to its use, and its advantages. What chemical change takes place in vulcanizing? What causes porosity and brittleness and how would you prevent them?
5. In the insertion of an upper denture what changes will be made in the expression by the following alterations in the position of the Cuspids, viz:—Too far forwards—too far backwards—points too much drooped—points too much raised, respectively?
6. Describe the proper relations of the teeth for the most perfect æsthetic results.

EDITORIAL.

Very Personal and Particular.—From the many cordial replies received to the circular proposing to revive this journal, we take it for granted that the Canadian profession feel the want of a home periodical. It is about time. We fully hoped when circumstances obliged us to abandon the work, that some of the wiseacres, who were always telling us how to manage our own business, would take the bull by the horns when the chance was offered, and show us how to drive it. But they did not, wisely for their own peace and profit. It may appear easy to bring out a journal of this kind; but as a speculation it is not as profitable as devoting the same time to one's legitimate business. It is ever so much easier to receive it regularly; and we would much rather be subscriber than editor. It involves personal sacrifice of time and money: it binds one down to a routine of work. Yet it has its compensations in the feeling one has of doing a duty.

We feel sure that the profession in Canada is prepared as before to support a monthly: but we could not give the necessary time this year for more than a quarterly. We hope we will not have to importune our friends to remit their subscriptions. It ought to be just as easy for any Dentist to remit at once as in twelve months. Of course it is easier not to remit at all: but we expect better things from our friends.

One thing ought to be borne in mind. We have many excellent dental journals on this continent, but this humble Canadian enterprise is the only one not conducted in the interest of a College or a Depot. Therefore as we have no ulterior object in view; no ware or institution to advertise; no corporate or business body to draw upon save our own purse in case of a deficit, we ask our friends to hurry their cash, and to keep their congratulations for the end of the volume. We want too, practical contributions. We want our subscribers to make this journal their vehicle of communication. As of yore, it is an independent organ, and will advocate whatever it feels to be for the good of the profession.

Fees.—Some of the best men in our ranks see undignified conduct in those who use show cases and loud advertisements to attract public attention, but they can see nothing undignified in lowering their own fees to the standard of these cheap advertisers. They very properly denounce the quacks who give very inferior services at very low rates; but *they* give the diamond of dental practice and experience at the price of paste, and see no mote in their own eyes! It is a fact that while low fees, as a rule, have discouraged good operators, and diminished the excellence of their work, there are men in the profession placing their best skill and the result of long and faithful study on a level with the fees of rascals, who would cheat widows and orphans with gusto, and steal coppers from dead men's eyes.

Quebec Dental Students.—Our students in the Province of Quebec have heretofore had to complain that while being obliged to submit to an examination for license no means of college instruction were provided by the Board. Of course it is optional with them to attend the colleges in the United States, some of which are fairly efficient, though none what they should be, and some of which are mere cheap and speedy manufacturing establishments for Dentists. Considering the numerical strength of the profession in Canada, it was high time that we should have a Canadian college. This want has been met by the School of Dentistry of the Royal College of Dental Surgeons of Ontario.

The Board of Quebec sent one of its members to Toronto to examine into the working of this school, and to receive proposals for the attendance of Quebec students, and after mature deliberation has decided that on and after the meeting, in July of next year, students of Quebec will be compelled to attend at least one session either in that institution or some other recognized Dental College. In our next issue we will be able to give particulars of interest to Students.

"How we Apples Swim!"—A young man from the city, much greener than his cousin from the country, writes us to say he "is of the opinion that he can practice Dentistry in Ontario or Quebec in spite of the Acts of Incorporation: that he maintains the said Acts to be utterly valueless, &c."

It's amazing how many such people have mistaken their vocation. Amazing how many eminent barristers have been spoiled in third-rate dentists. We know one simple soul who has concentrated the whole energies of twenty years in the one absorbing ambition to be a successful ("money-making") dentist. He has turned out a very poor failure at best. Yet without ever having studied law, without ever having had a reliable legal opinion given him, he smiles self-complacently, and dogmatically denies the value of the Dental Act in particular as well as all corporate legislation in general. It is a very unlikely thing that the Legislature would make a law "utterly valueless," and that the legal opinion of a dentist should be more reliable than that of eminent attorneys.—*Ne sutor ultra crepidam.*

Canadian Dentists Abroad.—When the Fenians threatened an invasion of Canada, and the robbers of hen-roosts were said to be swarming in upon us like the locusts of Egypt, Canadians all over the continent turned up in person or by letter anxious to have something to do on our side of the question. And so when the Canada Journal of Dental Science gave signs of rousing again into life, Canadian dentists abroad seem to have got wind of it through the courtesy of one of our contemporaries, and we are able to tell our readers where some of them are. When in France two years ago we enjoyed delightful holidays in Paris with Dr. Ed. Lefaivre, formerly of St. John's, Que. Dr. L. is associated with Dr. Thos. Evans, of Paris, and looked hearty and happy. Dr. Patton, of Quebec, has become a permanent citizen of Cologne, Germany, and has not only achieved a splendid success professionally, but has formed an alliance for life which we trust may make him a happy

home. Dr. Day, of Kingston, has made his mark in Chicago; Dr. Bastow, of Kingston, is enlightening the Mexicans; Dr. Henry Davis, of Montreal, is settled successfully in California. Twelve more from Ontario, whose residences we do not know, have also left for better locations. We regret to lose so many of our best men. But this is what comes of cheap dentistry and an over-crowded profession. The Canadian public has not yet learned to discriminate between true worth and boasting mediocrity.

A Self-regulating Vulcanizer is one of the desideratums of the Laboratory. We do not intend turning our editorial columns into an advertising medium; but there may be special reasons for drawing attention to a good article which will justify its insertion here. When in England we learned that several using this vulcanizer of Messrs. Walkers, found it met every want in vulcanizing, and a confrère in Montreal who has used it for some time, thinks it improves the vulcanite by the steady manner in which it maintains the heat. It needs no attention; saves time; and is not at all likely to blow up like so many of the common vulcanizers now made.

BOOK NOTICES.

A System of Surgery, Theoretical and Practical, in Treatises by various Authors. *Edited by T. Holmes, M. A., Cantab. Surgeon and Lecturer on Surgery at St. George's Hospital; Member Corresp: de la Société de Chirurgie de Paris. Second edition in five volumes, with illustrations. London: Longman, Green & Co., 1869.*—Few undertakings have been of greater benefit to suffering humanity than the publication of this magnificent work. Its success as a publication shows the appreciation in which it is held by the profession in Britain and the Colonies, where it is universally recommended as a book for reference in the colleges, and there are few medical libraries of successful men that do not contain a copy of the work. As the combined effort of a large number of practical scientific men, it is one of the finest evidences extant, of the advancement and civilization of the age. Written as it is by a large number of surgeons, each particularly well versed in the subject on which he treats,

the work is of double interest to the dental surgeon; first, on account of the intrinsic value of the information conveyed, and secondly, as shewing the tendency and necessity—from the widening field of knowledge and operative procedure—to divide practical surgery into separate sections. The surgeon who would rise to eminence in any particular field must be thoroughly grounded, not only in the general principles of surgery, but must also be well acquainted with the diseases and accidents, and methods of treatment in general surgery. By this means a more general and varied view of particular cases in special sections of surgery can be obtained, and the best methods selected for successful treatment. There are no parts of the body, with which its longevity and general health are more intimately connected, than those with which the dental surgeon has to deal. The every-day comfort and beauty of the multitudes moreover, to say nothing of the successful treatment of accidents and the remedying of disfiguring deformities and defects of innumerable unfortunates, is so closely connected with the deep and varied knowledge of the dental surgeon, that he should avail himself of every means to enlarge his own powers and to elevate the grade and widen the scope of the dental profession. A study of this work will afford such a variety and extent of information, capable of direct application, or by inference or deduction capable of being made serviceable in advanced dental surgery in its various parts, that we advise all those who are ambitious of rising in and advancing the science and practice of dental surgery to make themselves acquainted with the teachings of this exhaustive work. If, as is usually the case, it is considered necessary that surgeons who practice on the eye, ear, throat or other parts, should be graduates in medicine, having a fair knowledge of general surgery, of equal importance is it surely, that those who treat and operate on organs so important and delicate, and prone to disease and deformity, as those that come under the care of the dental surgeon, should be no mere tyros in general medicine, or ignorant of the possibilities and capabilities of surgical science and art.

The arrangement adopted in this work is as follows:

I. The diseases which affect the whole system are first described, and this part comprises the essays (on Inflammation and its sequelæ, Erysipelas, Pyæmia, Hectic and Traumatic Fever, Tetanus, Scrofula, Hysteria, Syphilis, &c.) ending with that on Cancer.

II. The next part treats of injuries which involve either the whole or a large part of the body, or which may be met with in any region. This

extends to the end of the essay on gunshot wounds in the second volume. These two parts comprise the whole subject of Surgical Pathology.

III. The various local injuries are next described, and in this part the anatomical order has been followed, the body having been divided into eight regions—the head, face, neck, thorax, back, pelvis, upper and lower extremity. By this plan it was thought that the injuries which affect the same parts, and which in practice have to be diagnosed from each other would be brought into the same part of the book and under the treatment of the same author.

IV. The principles of operative and minor surgery, and of the employment of anæsthetics, follow the essays on local injuries.

V. The next part comprises the surgical diseases of the various organs of the body. These have been arranged according to the function of the parts affected : as the diseases of the organs of special sense—the eye, ear, and nose ; of the organs of locomotion—the bones, joints, muscles, tendons, and their sheaths, &c.

VI. An appendix completes the work, comprising the principles of Surgical Diagnosis, of the Surgical Pathology and Treatment of Children's Diseases, the construction and management of Hospitals, and various miscellaneous matter which it was found difficult to bring under any of the previous heads."

Such a rich mine of knowledge as is contained in these five systematically arranged and well-printed volumes, deserves to be diligently and continuously studied by the dental surgeon who would practise with benfit to his patients, and credit and emolument to himself.

Students Guide to Dental Anatomy and Surgery, &c. *By Henry Sewill, M.R.C.S., L.D.S. &c., London, Eng. 77 illustrations. Price $1.75. Lindsay & Blakiston, Philadelphia, 1877.*—It is refreshing in these days of verbosity in dental literature to open a book so practical, pointed, and free from penny-a-lining. Too many of our text-books are crowded with words and illustrations. The art of writing a student's text-book so as to avoid either fault has been obtained by Mr. Sewill. The second chapter contains the most recent physiological knowledge of the origin and development of the teeth, showing tersely and clearly the lessons of Kolliker, Waldeyer, Huxley, and Robin. Those who found their first lessons in Goodsir will enjoy this. The chapters on exposure and diseases of the pulp, periostitis, diseases of the gums,

neuralgia, extraction &c., are well written. The book is got up in a dangerous style, because when a dentist takes a holiday he should leave dentistry in his office. We went off fishing one day and instinctively put Sewill's guide in our pocket.

Taft's Operative Dentistry, *3rd Edition, with 128 Illustrations. Price $4.25 and $5.00. Lindsay & Blakiston, Philadelphia, 1877.*— This work filled a void at the time it was first issued, but with the addition of one hundred pages of letter-press and forty-two illustrations it may be said to monopolize the specialty at which it aims. It is very easy to run hastily or even carefully over any work and pick out faults. We do not think Prof. Taft's work by any means free from sharp criticism. We might easily point out faults of omission and commission. We do not think he has quite rid himself of some old prejudices, which modern investigation prove to be unsound: but for all this we are willing to accept the work as that of an honest man, actuated by an earnest desire to assist the student in the details of operative dentistry; and after all what he writes is simply his own opinion, just as wherein we differ is simply our own individual opinion. But there are two or three points in which we think he dogmatizes without seeming to know, or rather affecting to ignore, the experience and experiments of careful investigation by conscientious and scientific men. Probably no book can be opened to agree with every opinion its readers hold. We put some sharp criticism side by side with much praise; for the author has so systematized the principles of operative dentistry, written his ideas in such clear languge, and given so much practical information, that his book must command large support. To pick out petty faults, and split hairs over slight mistakes, is only the work of jealousy and narrow-mindedness. The work is got up in Lindsay & Blakiston's best style and does them credit. It is one of the books, like one of the friends, with whom to differ is sometimes to whet the edge of liking.

EPITOME OF THE PROCEEDINGS OF DENTAL SOCIETIES.

We will resume this feature of the C. J. D. S., which, omitting all superfluities of speech, gives the gist of discussion. It will give as much practical matter in one page as is generally occupied by five.

New York Odontological Society.—Dr. S. P. Cutler read a paper on the transplantation and replantation of teeth, chiefly confined to the consideration of the transplantation of old, waste teeth lying about the office. Dr. C. gave six cases in point, some of teeth transplanted which had been out of the mouth for several years; also several cases of personal experience in replantation. The Dr. thus explains the rationale of the process of growth after transplantation: "When a tooth is removed from the socket there is a solution of continuity similar to that of a broken bone, and a process of restoration is then commenced. When a bone is fractured there is improvised from plastic lymph, within twelve or fourteen days, a connective-tissue matrix to serve as a cartilage for ossification, which begins about the time specified. In about a week after the callus becomes quite firm, and in 30 days from the time of the accident (generally) the bone has, if properly adjusted, become knit together, although perfect union cannot so soon take place; the time for such union varying from one to two years. The periosteum is mainly concerned in the above.

In the cavity whence a tooth has been drawn a similar process ensues, the cavity must fill up at the bottom, while the alveolar border must waste away—the process being a double one, in waste and reproduction. The process is chiefly accomplished by the alveolar membrane; first by improvising a matrix of plastic material at the bottom of the cavity, which in about two weeks begins to fill up with lime, and ossification goes on in about the same manner as in the case of fractured bone. An external table of bone is then formed over the point, when the process may be regarded as complete, the gum afterwards forming a true periosteum.

Dr. C. denies the possibility of any union of nerves, or blood vessels, in replantation; and holds that there is no difference, as regards the final results, whether a tooth has been out of the socket five minutes, or five years. The only circumstance that can affect those results is adaptation. If a transplanted tooth does not entirely fill the socket an extra filling must take place. From the 12th to the 30th day is the most critical period of the process, as in the case of a broken bone—absence of motion being essential to success.

Transplanted teeth, having no membrane left to experience subacute inflammation, are not as liable to after-trouble as dead teeth which remain in their sockets. Where failures occur no osteoplatic inflammation takes places, but the alveolar wastes and the transplanted tooth is

expelled. Dr. C. does not advocate indiscriminate transplanting or replanting. One in four cases may be looked for as failures.

Dr. C. A. Marvin dissents from the statement that the process following a fractured bone is the same as that following the extraction of a tooth, in the matter of filling up the cavity, and held the retention of a replanted tooth to be mechanical, a closure of the alveolar walls, without any renewed vital connection. The tooth is tolerated. Having no vital connection it can receive no injury except through mechanical violence. The subject, however, was worth attention. Better to remove a diseased tooth if it can be replaced as is claimed, than to preserve a long, painful course of treatment with doubtful results.

Dr. W. H. Atkinson, referring to Dr. Cuttler's denial of a ruptured pulp re-uniting in replantation, said where teeth have been extracted accidently before complete development they were replaced and the roots developed to completeness, and pulp connection restored.

Dr. Wm. Jarvie, Jr., could not accept the proposition that a tooth which has been out of the mouth for years can be put into another mouth, the root being filed and trimmed to fit the socket, and cementum be deposited upon its root.

Dr. W. H. Dwinelle pooh-poohed the idea that old teeth transplanted could have a new crust of cement deposited upon them with all the peculiarities of cementum, with its new bone-cells and canaliculi and lacunæ.

At a subsequent meeting Dr. E. A. Bogue read a paper upon the subject of Dr. Cutler's; being an elaborate review of the last one hundred years experience of various persons, "all tending to show that there is no physiological reason why replantation when necessary and even transplantation under proper conditions should not be successful." Dr. Bogue gives very interesting and suggestive extracts from different writers *pro* and *con*, and draws his own conclusions as follows:

What deduction can be made from these records?

So far as I am able to judge, this: that from the days of Hunter on until the practical abandonment of this operation, about 1820, teeth were transplanted and replaced without regard to what we now look upon as essential conditions, and yet the percentages of success were such as

to cause those operations to be classed among the regular operations of surgery.

Now, what is meant by essential conditions?

I mean to enunciate the proposition broadly, that a dead body or one severed from its vital connection, whether it be in the pulp cavity of a tooth, or lying out upon the open prairie, will inevitably undergo putrefactive decomposition. I mean to assert, too, that I can find no record save one in which I can place any confidence of the reforming of vital connection between the replanted or transplanted tooth-pulp and the socket into which it has been placed. Indeed, the process of luxation was devised for the special purpose of breaking, and thereby destroying, vital connection between the pulp and the soft parts within the socket, for the cure of toothache, long before the use of arsenic was thought of for the same purpose.

The single exception to this rule was in the case of the tooth which Hunter "transplanted to the comb of a cock," and which was the only success after many failures.

I think we may safely conclude from this that no teeth transplanted in actual practice had vital connection renewed in the pulp; hence they had a decomposed pulp within, in precisely the same condition which to-day is known to produce alveolar abscess, and which to-day we know so well how to prevent that I regard an alveolar abscess as an entirely preventable disease; not agreeing with the old writer who said that "the cause of toothache is known only to God."

Again, the antiseptic system has, I think, made some advances in these latter days; if not toward new discoveries, at last toward re-discoveries, with results that have been exceedingly fortunate in the domain of surgery. So that to-day we may reduce to a minimum, if we may not dispose of altogether, the danger of transmitting infectious diseases.

As experience has shown that replanted teeth do equally well after having been out of the mouth some hours as when immediately transplanted while still retaining their animal teeth, and as we are pretty well assured that the virus we most dread carries no infection after once becoming cold, we may consider ourselves by so much in a better condition to make this operation successful than were the practitioners of a hundred years ago.

We now approach another part of this subject, and one, I will confess, offering to me far deeper interest than the one just reviewed, viz., the

transplantation of dead teeth, or teeth that have long been out of the mouth.

One of our guests at our last meeting pronounced this part of the question "unmitigated nonsense," and hinted that we should perhaps next be called upon to believe that porcelain teeth could be transplanted and made to grow in the human jaw.

I am disposed to think that this gentleman did not receive his invitation to attend this meeting sufficiently early to enable him to examine into the question that was announced for discussion; for a gentleman who has forgotten more than most of us ever knew can surely not be ignorant of the physiological facts bearing upon this matter, and recorded in the pages of Billroth, Kölliker, and Tomes, and other investigators of that field.

Billroth found that ivory pegs that had been driven into living bones had osteoklasts upon them, and Kölliker found in such a case that Linhard had not only typical Howshipian lacunæ, but also polynucleated giant cells, showing the continued vital action of the parts surrounding the intruding substance. Mitscherlich relates instances of partially successful results from the implantation of dead teeth, in which cases the inserted tooth becomes fastened by osseous tissue which grows into the dentine from the maxillary surface. This observation is quoted also by Wedl, at the end of a sentence giving his views as to the cause of the results of transplantation, being upon the whole not favorable, because the roots of corresponding teeth, in different individuals, vary so much in thickness, length, and curvation; consequently, the alveolus is either injured or incompletely filled, and the subsequent inflammatory processes prevent the desired fixation.

In conclusion, then, it seems that the weight of testimony in favor of the implantation of dead teeth equals, if it does not surpass, the testimony in favor of transplantation and replantation; while these latter operations, with our present knowledge, offer a field for increased usefulness to our fellows that promises to be of far greater value than was formerly supposed to attach to them.

Pennsylvania Association of Dental Surgeons.—The committee on mechanical dentistry reported that the *cuspids* in gum section are too small and narrow, and not sufficiently prominent. These teeth should be fully as wide as the central incisors. Notice was drawn to the error made in having separations between the over-lapping or crowded teeth in

sections, designed to represent irregular teeth. Bicuspid teeth of block sections are not large enough, nor do their masticating surfaces approximate sufficiently in shape and depth of cut to the natural teeth of this class. It was suggested that the holes in pivot teeth should be bored entirely through to allow of them being used for various styles of wood and metal pivoting. Pivot teeth should be set up in sets of two, four, and six to facilitate selection.

In a discussion on irregularity of the teeth the general tone of the meeting was, that whenever a tooth could be brought into position *without* a ligature, it should be preferred. Whenever screws could be applied they should, as their action was less irritating, and generally more certain. That the mouth should be encumbered as little as possible with plates or appliances for changing the position of the teeth, and that whenever nature could be *made* or *aided* to do the work of regulating the teeth by the simple extraction of one or two teeth, this plan should be adopted in preference to ligatures, bands, screws, plates, inclined planes, etc. (*Cosmos*).

SELECTION.

To USERS OF AMALGAMS.—The best form of instrument for condensing the first part of a plug so as to obtain proper contact with the walls of the cavity is a small ball-headed burnisher, and all plugs should be commenced and built up with this instrument alone as far as possible. The correct form will be found in Ash's catalogue for 1875, fig. 43, p. 130. *This instrument is one of the essentials in obtaining sound plugs which do not discolour the dentine.* The surface discoloration of the plug depends, to a certain extent, on the alloy used, but almost entirely on the quantity of mercury contained in the amalgam. The smaller the proportion of mercury used the less the discoloration. If a cavity cannot be kept perfectly dry until the plug is finished it is far better to pack the plug under water from the commencement. This at first sight appears strange, but the explanation is simple. If a plug gets wet on the surface before it is condensed, the air enclosed in the under part of the plug is compressed. When the pressure is removed the confined air lifts and disintegrates the plug. Pack either all wet or all dry, and do not leave a plug soft in the mouth in contact with water. Unless moisture is totally

excluded a soft amalgam is worthless if both freedom from discoloration and permanence are required. An alloy used for amalgam, whatever its composition, is utterly unreliable unless every ingot has been carefully tested for shrinkage, expansion, packing and retaining its shape under water, and discoloration. However good an alloy may be generally, no single sample of it is trustworthy until after a series of tests which cannot be completed in less than three to six months. The difference between a tested and untested amalgam is the same as between a tested and untested steam boiler; one is trustworthy, the other possibly may be so. If a steam boiler is made to work at 30 lbs. 39 inch pressure, and is worked at 100 lbs., the failure, if it occurs, rests with the user. In the same way, if an alloy is made to work with 30 per cent. of mercury and is used with 100 per cent., the maker cannot well be blamed for unsatisfactory results.—THOMAS FLETCHER.

(*Brit. Journal Dent. Science.*)

HINTS AND QUERIES.

Understanding that your independent Journal is soon to appear again, I trust you will give some hints and hits to Dental manufacturers. Is'nt there a sickening amount of bragging among them? G. L. [*See next number.*]

Is not the profession in Canada overcrowded? R. J. [We will answer this in our next number.]

Have you used the Eureka, or 15 minutes Rubber? T. H.

Will some one give us a concise and practical paper on Alveolar Periostitis? L. D. S.

Speediest temporary treatment for inflammation of the pulp? M. E.

Will some one with experience in the use of Phosphates give their action, especially directed to the teeth, and especially during pregnancy. [We are already promised an article for the next number on this subject. We have used and recommended for several years Dr. Wheeler's preparation made in Montreal.]

CANADA

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ORIGINAL COMMUNICATIONS.

A REPLY TO "USERS OF AMALGAM."

BY J. A. BAZIN, L.D.S., MONTREAL.

I take exception to the gist and tenor of the selected article. "To Users of Amalgam." I do not know how many years the writer has been in the practice of using amalgams, or to what extent he has been able to follow and observe the real test—use in the mouth ; but my experience of twenty-five years, and a considerable amount of what the Scotch call gumption lead me to present a different view of what will be found a better, method.

In the first sentence he says, "the best form of instrument is a small ball-headed plugger, &c. Now he must have had in his mind only one type of cavity, and in this country, a type rarely filled with amalgam—a round small hole. But, Mr. Editor, how about the hundreds of jagged, irregular cavities, having almost no form and certainly no comeliness? I think I shall become bald-headed, before I can make a ball-headed burnisher do first class work in such cases. When it is remembered, that amalgam is *filings*, more or less coarse, in combination with mercury forming a *granular* mixture, it ought to be obvious to most, that the *best* way is to pack a filling with points almost square or eight-cornered, much after the way we make a mould in sand, from circumference to centre, layer upon layer. Plugs put in in such a manner will be found perfect in their adaption, and less likely to discolor the dentine, than when

rubbed round the cavity with the instrument advised. *The more friction of the amalgam upon the walls the more certain of discoloration.* To sum up this matter, I say the best way to fill with amalgam is to work exactly as if you were building up a gold plug, and with similar instruments. Again, this matter of a wet pack ; *that* will not go down here, even with something stronger than water. It is well known that many dentists are glad of an excuse for bad work, so it will be difficult perhaps to persuade them, if they be readers of your Journal: but is it not possible to dry, and *keep dry* a hole in a tooth long enough to put in *part* of the plug, and then dry *it* and then finish. I believe it is, and oppose any other idea. We used to have that told us about gold fillings, and also that *all* the decay need not be removed, but when we take up our work with a feeling like as if a brother dentist was looking on while we worked for his favorite child, we will hardly follow such foggy doctrine.

The writer draws it fine indeed upon the testing question, rather more than upon the more important using of it in the mouth. We heard a good deal about the tests that his 'Enamel' had, and the wonderful things it would do, when after all it was the old thing with a little clay. Good work is desirable and ought to be striven for, and our public teachers should try to avoid any advice savouring of the slip shod. Trusting this maiden effort will have the good effect I earnestly desire, I wish you success.

PRESERVATION OF THE CUSPIDS IN MECHANICAL DENTISTRY.

BY J. R.

No artificial substitute can ever take the place of the cuspids, and for this reason I always save them if sound ,or even when decayed if they can be preserved by filling. It often happens that they, standing like the pillars of an arch, are fixed and sound when all the others have come to grief. I have frequently found the hard tissues of these teeth under the microscope to be of denser and better structure than the others in the same mouth. Nature seems to have implanted them with a design which no artificial substitute can fulfil, viz : that of preserving the contour of the lips. The length and fulness of the root towards the front cannot

be replaced, and an ugly depression of the lip under each nostril make a defect impossible to be remedied.

A nice fitting block of four gum teeth, such as the beautiful sections made by Justi, cannot be improved upon. I think no full upper permanent set can compare to such a piece, where the natural cuspids are preserved, and the shape of the mouth kept as nature made it.

TWO CASES OF EXTRACTION.

BY M. D. T.

Some time ago, a stout labouring man called in the evening suffering from a left lower first molar, desiring to have it removed. Upon feeling with my finger I found it quite moveable in the socket, and the gum considerably lacerated. I at once saw that some one had tried the tooth before, but I asked him no questions. I seated him as usual, and took the usual forceps, expecting to have an easy task. But after pulling for about a minute I had to stop. I left him for five minutes expecting that it would be looser, but upon the second trial it was still a standing rebuke to my muscle, as I thought. For the third trial I wrapped a napkin round my forcep; got my patient down on a low chair, and after *lifting him* from his seat, and doing my very best I had again to give it up. The fourth trial was a repetition of the former three, and I felt that my hand was getting the worst of it. My patient looking me in the face with the serenity of a seraph, then told me that I was the third dentist who had tried that tooth during the day. I suggested to him the pity of parting with it; that he ought to travel the country and put the profession from Gaspe to Sarnia to a test, and that after they had all failed he could return to Montreal, and get his jaw broken by our city quack. But he was bound to have it out; so I split off the crown and after a good deal of work succeeded in removing the two roots, which were spread like an A.

Last week I tried five times, twice in the morning and three times the same afternoon to extract the first upper molar, right side, for a cast-iron jaw gentleman. I would have defied any one to extract that tooth without serious fracture of the alveolus, and possibly the removal of the adjoining

bicuspid. The next day under chloroform administered by a physician, I tried three times again, and finally had to split it in pieces and remove the roots, which were something of the shape of a three-legged chair curled like Italian columns.

SALIVATION FROM PREGNANCY.

BY L. D. S.

A well-known lady in Montreal, called upon me with a profuse discharge of saliva, which ran out of her mouth day and night, until her strength was completely exhausted. It began about the second month, and continued for about two weeks before her confinement. Nothing seemed to arrest the flow. The cause of it was very clear, as her teeth were in perfect order, she having only had three cavities filled—one with tin foil which was as black as ink, and two with gold.

As a specimen of diagnosis, a dentist whom she consulted when in company with a friend, accused *the one amalgam filling* in her tooth as the sole cause of the discharge. The poor woman not knowing the composition of the black filling, and having been solemnly told by this gentleman that it was "poison," returned to her own dentist to have it removed. Of course he showed her that it was tin, without any mercury in it, inserted as foil. This is a fair specimen of the depth of research and diagnosis of the "discoverer."

Any student ought to know mercurial salivation *(ptyalism)* by its fœtor, and by other indications not exhibited in salivation from any other cause. But if a bigot cannot establish his bigotry upon a rock of truth, he will build it upon the fickle sands, rather than not build it at all.

PLAIN WORDS FOR DENTAL MANUFACTURERS.

As a profession we are deeply indebted to our dental manufacturers. As manufacturers they are quite as deeply indebted to us. They have eased and facilitated our labor, and have been hand-in-hand with,—often ahead of—the thought and progress of the profession. But they have naturally

enough sometimes been over-zealous in their zeal, until it is questionable whether the profession dictates its wants to the manufacturers, or the manufacturers impose their ideas upon the profession. It is likely that truth lies mid-way between these two extremes. They have been a great boon to us, and those who have become millionaires deserve their success as well as successful men in any other sphere. Many depots are struggling for business, and all of them have their peculiar advantages: no one monopolizes the inventive genius of the day or controls the purity of gold, the temper of steel, or the honesty of the human race. Yet, an impartial person reading many of their advertisements would be struck with the fact, that each one lays emphatic claim in most cases to possessing the *ne plus* ultra of everything the dentist requires, and that simple assertion has got to be the final arbiter of simple facts.

It is a fact that our dental journals are mainly advertising mediums for manufacturers and colleges who own them; that while they are in a measure exponents of professional thought, they are first of all monthly advertisements for their proprietors. We find no fault with the enterprise of these gentlemen. It pays. But we do think that a body like the dentists of the United States, out of all the Journals they possess, might have at least one, as independent of any manufacturer, college, or other such business interest as this unpretending Canadian venture. Naturally no advertising medium of a manufacturer, where the bulk of the book is occupied with his own productions, and other manufacturers are deterred by excessive rates from advertising, can or will do justice to the good in other Nazareths. We have plenty of able men competent to conduct independent Journals, quite as well as those conducted by our friends the manufacturers. In no sense would this be a slight; because a profession like dentistry ought to have its independent Journals, where impartial examination would be made of every so-called "improvement," and we would know what to trust and what to reject.

We have been turning over the advertising pages of many of these periodicals, extending back many years. It is a suggestive fact that a long array of exhaustive puffs and extravagant statements made to the profession, present themselves about articles which were never worthy of honest consideration, and of many which were arrant impositions. Every new article to-day is boosted into notice in the same way. All the superlatives in the English language, together with the standard classical quotations, and modern illustrations, are brought to bear in defence as

well as defiance. Everything new is a "great improvement"; every modification is like the last ditch of difficulty; each chair is "superior to all others," and the height to which they are extolled by their producers is only equalled by the depth to which they can sink their rivals. Where are all the "unrivalled" articles which were to be the acme of dental desire? Mostly in the dental lumber room!

Progress must necessarily make old fogies of improvements once young. But the modern rush in competition is producing such a host of unprincipled humbugs that we pant for breath at the prospect. There is not a modern dental chair from its head rest to its footstool, as comfortable as some of the old fogies of thirty years ago. There are modern chairs by the dozen with ingenious nonsense enough about their head rests and machinery to perplex any operator. They are more showy and handsome, and expensive. But many of their movements are not needed. A man who tries to keep up with the so-called "improvements" would need to re-furnish at least once a year.

We recall the days of gutta-percha, aluminum, various metals, pyroxoline, celluloid, etc., as well as a host of lathes, vulcanizers, flasks, articulators syringes, engines and "improved" engines, hand-pieces for engines amalgams, white cements, gold, instruments, *every one superior to every other*, even where a dozen at a time of some, and at least four of all were in the market. They could not all have been "best." Every chair, engine, and instrument to-day cannot all be best. Somebody must be bragging most outrageously. Possibly some of the braggarts may be lying. They can't be blind.

It is time that the profession should cease to be held by the nose by every new thing introduced. Some have been of incalculable benefit—such as the rubber dam, the dental engine, etc., but "testimonials" are now-a-days strown about by the score in favor of any new thing a depot displays, and the only safeguard is calm examination for oneself, *taking every extravagant claim on suspicion.* We accumulate stores of useless stuff in our offices. We are bored by the loudness of advertising assertions. An instance in point. Several years ago, a dentist bought several pairs of forceps from a manufacturer. Four of the five were so brittle that they broke at the edges. Upon mentioning this a few years afterwards in a letter, the reply came back "*Our forceps* never fail. Return them, and if they are ours we'll exchange them." The agent of the firm happened to call on business one day on the purchaser, and the latter

proposing to take him at his word produced the forceps. "Oh, those arn't ours. Those are ———— make." "Yes, but your name is on one side of them, and by your advertisment of that date you guarantee these very forceps as "superior to all others." "Yes, but ———— makes for us now. Any with his name we will exchange if defective."

Another instance, "If you buy instruments made for our engine by any other maker, they are inferior." Why? Do you monopolize the simple art of tempering a bit of plain steel?

An accident happened to a lot of burs for the engine. They had to be re-tempered. They were sent back so brittle that they had to be sent to their original maker for re-tempering. The excuse got from the first party was that, "our steel is not inferior. That steel is inferior and cannot be better tempered." Yet the original maker tempered them after this to perfection, and made no fuss about it.

We could instance half a hundred such cases. We ask is this *honesty* among honest men? Some one nudges our elbow and says to use the orthodox proverb, because of the excessive charges for bits of steel. For instance says our elbow friend, there is over three hundred per cent profit in dental engines, and look at the price of steel excavators, and pluggers a dozen. Do you remember too when we paid twenty-five cents a tooth for porcelain teeth, when labor and material were cheaper than now Yet better teeth are sold for ten and fifteen to-day! What is the inference That we were being charged a very large per centage too much for twenty years. We will have our eyes opened as a profession bye and bye.

[We are warned that the publication of the above will cost us the loss of many advertisements! The more's the pity. *Ed. C. J. D. S.*]

A UNIQUE CASE OF REGULATING TEETH.

BY W. GEO. BEERS, L.D.S., MONTREAL.

In a paper read before the New York Odontological Society, in December 1875, I ventured to give one of the quickest cases of regulating the teeth on record, done without plates or ligatures, and comprising ideas as old as Hunter and as modern as Tomes. The case was a unique one, inasmuch as it was one where the patient a young man eighteen years old,—had determined to have the teeth extracted, and artificial substitutes nserted. I am aware that other modes of treatment might have been

used by those who could command a large fee, but as the case was one which I volunteered as an experiment, and for which no reasonable fee was expected, I made choice of two evils—the one I choose having proved to be a blessing in disguise. Through the courtesy of the publisher of the "Cosmos" I am able to present the illustrations.

Fig. 1 shows the normal centrals lying outside of the arch, five-eighths of an inch apart, the left lateral behind the left central, three-eighths of an inch distant, with one side against the back of the canine, while the right lateral is crowded to the rear by the cuspid and central. On the left side of the median line is implanted a malformed supernumary lateral: on the right a supernumary central, perfectly formed on the lateral but concave and irregular on the lingual side. Its lateral surface is turned towards the supernumary lateral, thus lying obliquely and touching the lateral. Evidently these supernumary teeth had displaced the normal dentition. This is somewhat analogous to a transposition of the dental germs in position, and owing to the distance of the normal centrals from each other, it was utterly impossible to bring them into juxta position or into any sort of harmony. The transposition of teeth might cause just such a result as the separation of the centrals. Fig. 1, well illustrates the case as it came to me first.

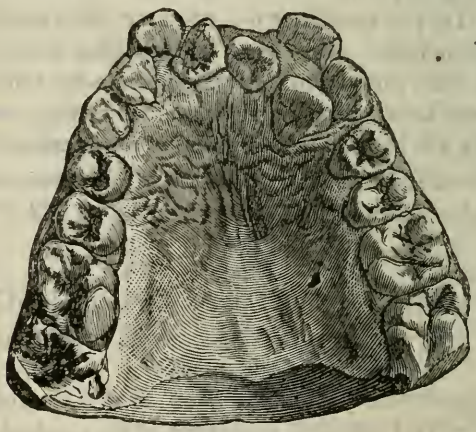


Fig. 1.

I first extracted the right normal central. It was too far out of the proper line and too far from the median line, to be brought into position by any mechanical means. Immediately afterwards I slowly turned the supernumary central on its axis, as suggested by Tomes, bringing it to

the "front face." Having previously prepared a plate fitting the roof of the mouth, I attached floss-silk to the intruder, and drew it back in one day into line with the lateral. The gum was painted with aconite and iodine, and the patient instructed to keep the lips and gum cool with ice. In two days the tooth was firmly in line, and the ligature was removed. The case then presented the appearance seen in Fig. 2.

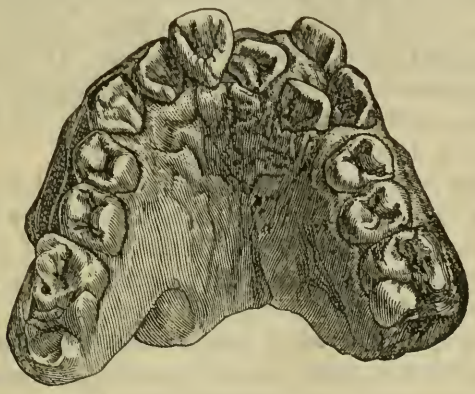


Fig. 2.

Members of the Quebec Dental Society, will probably remember a case presented by Dr. H. D. Ross of Quebec, in which he replanted a dislodged central incisor, and which he afterwards, when regulating the teeth of the same patient, found he could not move by any mechanical means he used. It was firmer than nature had originally put it. Something similar occurred in the socket of this supernumary twisted central, for ever since it has been singularly solid.

In Tomes' Dental Surgery, edition 1873, page 197, is seen a somewhat similar case of irregularity in appearance, though from transposition of the permanent teeth, instead of from displacement by supernumaries. The canine is placed between the central and lateral; the teeth being otherwise quite regular. Referring to it the author says. "In a practical point of view no great interest is attached to this form of irregularity, *as it does not admit of remedy*." Garretson's System of Oral Surgery, page 480, says "Instances are met where certain teeth have completely changed position. A lateral incisor appears in the situation of a central, the central occupying the place of the lateral. *Here there is no correction possible except it be in the extraction of the teeth*, and their re-arrangement upon a plate or through the pivoting process." Salter in his Dental

Pathology and Surgery, page 51, in writing of the transposition of teeth, supposes a case almost identical in appearance with that shown in Fig. 2, and says, "*Still no remedy is available.*" Fox mentions a case like Fig. 1, where two supernumary teeth were situated partly behind and partly between the central incisors, which were consequently thrown forward. The centrals were half an inch apart and formed one row with the cuspids, as in Fig. 1, and the laterals and supernumaries another. Fox saw three cases of the kind, but it is considered very rare. The one of which I write had this appearance, but instead of the supernumaries being of a conical and therefore useless form, the central was perfect on the lateral side and as seen in Fig. 1, turned towards the median line.

My patient was now treated as follows: It will be remembered that Fig. 2, was the result of the first operation. A few days afterwards I extracted the supernumary lateral, on the left side of the median line. I then extracted the left normal central which was so high on the upper part of the alveolus, that the lip entirely concealed it, (see Fig. 1). After excising the apex of its root I pushed it slowly up into the socket of the lateral I had just extracted, fortunately securing the beautiful relation and contiguity seen in Fig. 3. In two days the transplanted tooth was apparently as firm as its neighbour which had undergone torsion; and there they are to-day, after over four years, as comfortable and as alike as if they had grown into the regular harmony they now present.

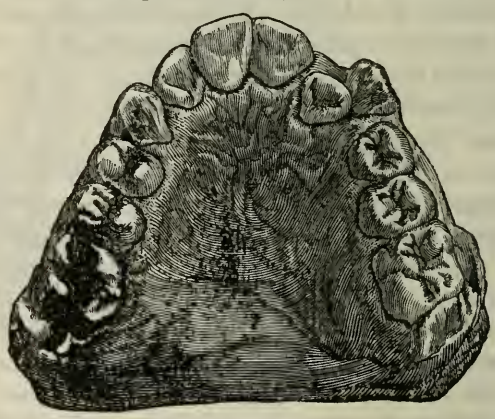


Fig. 3.

The cuspid was drawn by ligatures back to the bicuspid, and the irregular central brought easily into place. The latter was a very easy matter as any one familiar with regulating teeth is aware.

Both operations were done in presence of my friend and former colleague Dr. Chas. Brewster, who has himself admirably succeeded in some cases of both torsion and transplantation. The patient kindly allowed several other confreres to see the case.

I may add that I shall not be amazed some day to learn that the teeth are loosening in their sockets. I do not here stop to consider constitutional conditions which should dissuade any one from attempting a case like this. These conditions have been well discussed elsewhere, and are familiar to the profession.

THE ADJUSTMENT OF LOWER PLATES.

BY W. GEO. BEERS, L.D.S., MONTREAL.

The dental profession on this continent once contained some of the most remarkable men to be found in the world. Once they were as thick in every convention as flies in sugar. Of late years they are receding before the scrutiny and common sense of an intelligent profession, and David's opinion of "all men" will in time possibly have less application to our profession. I refer to the men who never make mistakes, who never have failures, whose efforts are always successful, and whose practice operative and mechanical flows on with rhythmical harmony and joy serene. Yet I am constrained to doubt if even these imperturbable people would solemnly swear, that they have had invariable success in the adjustment of such simple things as partial and complete lower sets of teeth. In the days of beeswax for impressions, it was no wonder that bad fits were common, but even in these latter days of plaster, and the impression-compounds, such as prepared by Jamieson, Ash, etc., of England, and by manufacturers in the United States, there is with many dentists ten times more trouble in fitting lower than upper plates. Those who visited the Centennial, could have seen a full lower plate in the mouth of an exhibitor, held in by soft rubber attachments, and which was certainly very secure, whether it would remain so or not. Air chambers are rarely if ever feasible. A set may be *loaded* with metal, so as to be kept down by their weight. Springs will keep lower sets in place: so will rivets through the lower maxillary, clamped on the outside, under the chin. But there are some serious considerations which may often help us in difficult cases.

The *absorption of the gums* must be complete ; more so than for upper sets. This starting point is too often overlooked, and a few weeks will make the set an annoyance, even if it was a good fit when inserted. The *impression* can now-a-days be obtained perfect, with plaster or the impression-compounds. Before the cup is pressed into place finally, the finger should be inserted in the mouth, and the lips and loose integuments of the cheeks drawn away from the ridge : the cup then pressed down and the patient instructed to raise the tongue upwards and to hold it there tight till the material hardens. Bees wax should be utterly abandoned for impressions as a thing of the past. A good impression may be spoiled in the removal. If of the compound it must be kept in several minutes till perfectly hard, and it must not be forgotten that the mouth retains the warmth, and that the hardness of the surplus is no safe guide as to when the part next to the gum is hard enough not to suck itself out of shape. A perfect impression is a harder thing to get than many imagine. It may even be dislodged and spoiled in the act of swallowing, by the elevation of the tongue and its frœnum. After the model is made the most careful trimming is now required, and those parts above the symphysis, and on the right and left of the frœnum slightly scraped ; and particular attention paid to making the pattern plate just narrow enough to avoid the motion of the loose integuments of the mouth. Most lower plates are made too wide near the mental foramen, and too deep at the frœnum of the tongue. For many difficult cases even of vulcanite, a pattern plate ought to be made and fitted in the mouth ; the patient instructed to raise the tongue upward and an exact amount cut away. The plate should then be replaced on the model, and a deep line drawn to correspond on the plaster. This line will of course be seen as a ridge in the vulcanite, and any surplus trimmed accordingly. Of course too, the articulation must be very perfect.

Somewhere or other I published a system adopted in my office by an old practitioner who was interested in some patent, and which in several cases worked well, viz., that of taking the impression over the mylo-hyoid ridge on both sides of the inferior maxillary, by pressing the plaster down with the forefingers and holding it till it hardened, and then adapting the plate on the inside with wings over these ridges. These wings may be warmed and bent closer to fit, and if the ridge above the symphysis is scraped a little, it would seem that a good fit might be secured. So it might if the mouth was cast-iron. I only succeeded in one case with these wings. I had to clip all the others.

EDITORIAL.

Dental Colleges in the U. States—a new Departure.—A split has occurred in the Missouri Dental College, of St. Louis, and under the lead of Drs. Spalding and Chase, the Western College of Dental Surgeons has been organized with a novel departure in education. Just when other institutions are demanding longer attendance upon college to qualify for the degree of D.D.S., our western friends jump to an extreme of their own, and in substance say "If you are able to pass our examination in anatomy, chemistry and mechanical dentistry, you can get our special degree of Master of Mechanical Dentistry. If too, you are a good anatomist, well qualified in physiology, materia medica, pathology, therapeutics, operative and mechanical dentistry, why should we compel you to attend the routine of our lectures before being examined? Whatever you are deficient in, you must become proficient, and then, no matter where, when or how you got your knowledge, you can pass us, if you can, and get your full degree." It is a fact that "there are hundreds of practitioners in this country who have no degree, and many of them superior to hundreds of others who having complied with the rules have obtained degrees." The W. C. D. S. therefore proposes perfect freedom of study: that these "hundreds" can avail themselves of any opportunity they think best, and pass without attending lectures—*if they can.* "Learn your anatomy when, where and how you like. But you must pass a good anatomical examination. It will be for you to judge how best to prepare for the trial. If you choose the lectures, we provide them for you, if you choose to learn in any other way, and think you can pass, we will let you try."

Dental education as it has existed in colleges on this continent, has not deserved much esteem. Saving the purely operative tuition we would infinitely prefer the dental curriculum established in England. It is more solid and disciplinary. We have met scores of leading dentists who would admit the advantage a college may possess in epitomizing time, and giving the student more practical information than he could get in the large proportion of private offices, and yet who hold the degree in contempt. It is a fact that young men have passed through college by the hundred, more filled with conceit than knowledge. It is just as true that a college course has done many hundreds real substantial good. Graduates themselves over-estimate their advantages: they have no right

to be the sole judges, or the arbiters of the standard of education needed to raise any dental degree to equality with a medical degree.

Now if the scheme inaugurated by the W. C. D. S. is to do harm, it can only be by the unfaithfulness of its professors, and the superficial character of the examination. We believe the professors are honest, and we think they are able. It is not an unlikely thing that hundreds who passed other colleges after attendance upon lectures, might ignominously fail to pass the Western. It will be seen in time how well or ill it works. It has a chance at least of promoting renewed study, and application, among a large class of qualified men in active practice who could not attend lectures, but who would be glad of the prospect of getting a degree to which they might feel they were entitled by virtue of their knowledge.

We have had good reason in Canada, for many years to hold dental degrees very cheap; and in conversation with many of the best and wisest practitioners over the border, we found a similar feeling. The trouble among our cousins is that no one is bold enough to take the bull by the horns. The profession in the United States has always appeared to us bound hand and foot to some vague idea of impossible regeneration or to some leaning upon an indefinite future. They see and know the superficiality of dental education. They seem paralyzed when its regeneration is approached; and the *ipse dixit* of men who have led under the prevailing idea of education, is looked upon as fixed as the laws of the Medes and Persians. A great revolution must take place in dental education before dental degrees can be respected. The good a college does may be separate from its degree and this without any inconsistency, because few deny but that these colleges can do practical good, but the good they do is by no means the highest standard, or the true qualification for an educated practitioner.

We have known young men go to Philadelphia from Canada, having had scarcely one year's pupilage, and barely two years practice for themselves, and after one course of lectures return full-fledged D.D.S's. The Dean declared that they had represented having had five years practice: the candidates as solemnly declare that they represented nothing of the kind. One candidate could scarcely speak English, but he attended English lectures, passed an English examination and we suppose *wrote an English thesis*, (though to-day he cannot write an English letter), and returned a D.D.S. No blame to him.

Another glaring instance. A student who when assisting his father, had several actions for mal-practice entered against him by citizens—one

action was settled by arbitration to the tune of about $400,—appeared for examination before the Dental Board of Quebec, *after his graduation* at Philadelphia. The Quebec Board is not a teaching body: its legal functions merely extend to the examination of candidates and the bestowal of a Licence (L.D.S.) to practice in the Province of Quebec. It had not until lately any legal power to compel students to attend dental or medical colleges. It merely had power to demand three years studentship. Of course under legislation like this, it did not assume to demand such an examination as a college. Yet it found some graduates much more ignorant than the students who had never seen the inside of a college!

The following is a verbatim copy of a few of the answers of this model graduate:

Q.—What carat gold would you use for base plates?

A.—Oh! *twenty-four.*

Q.—Would you not find that *rather stiff*?

A.—Oh! that's just what we want. But in the States we used twenty-four, but for the French Canadians here, they don't pay, we use *about eight.*

Q.—What is the distinction between inflammation of the pulp and that of the periosteum?

A.—No difference, just the same.

Q.—What is the chemical composition of saliva?

A.—Oh! oxygen, water and *nitrate of silver!*

And so on to the end of his examination, with the sole exception of some elementary questions in operative and *rubber* dentistry.

So frequent were the "accidents under his care," that he attached the following to a card giving his name and address. "No responsibility in extracting teeth, or injuries accidently inflicted in mouth!" There's a gem of grammar and graduated science for you. But a crowning gem, a very Kohinoor is to come. One of the victims entered an action for damages against him, upon which he wrote the following letter, which we copy verbatim from the Montreal "Witness," to which paper it was addressed.

"The following letter will, we are assured, speak for itself—(Ed. Witness):

The action of damages which is said to have been taken in Superior Court, by Mr. ————is false, there is no grounds taken.

In attempting to extract a tooth which was very bad for him, it accidently broke of which could happen to most skilful Surgeon Dentists. I

offered to take out the remaining root, but he refused and went out of my office in very grossly way. Know doubt he went afterward to jealous confreres or to *jaw Brokers* which from their fractured his jaw in extracting root.

Mr. ———— confess to several of my patients stating that he had root extracted, an in so doing the dentist told him that there was know danger of ketching cold from wound, from end of that week after having root out had suffered for month cause by poor advise of Dentist.

I am, your truly,

A graduate of philadelphia Dental College.

Signed, ————————

We do not cite this as a specimen of a class of graduates. We cite it as a fact, and leave our readers to form their own opinions.

Dental colleges as they have existed, have been better than most private tuition: but that is'nt saying much. They undoubtedly are useful, but it is a hollow farce under existing curriculums to turn out men with a D.D.S. *as if it represented ability.* That is the point. Let a college teach its worst, but do not let its curriculum be cast in our faces as something superior, something infallible, when we know for a fact that it is no superior qualification, and that a large per centage of graduates do not get more than a mere smattering of knowledge. We have known dozens of young men pass by at once such a curriculum as that of Harvard, for the speediest road to a degree elsewhere. Others want to give their whole time to operating at college and expect a degree.

There is a serious fault somewhere in the colleges. We believe it is mainly in the curriculum, but it must be partly too in the examinations, and largely too in the want of one or more General Board of Examiners. How many who have passed the examinations in their own college, would have succeeded before an impartial central board?

No doubt the Western College will have many applicants who want to get a degree easily. But *if they are qualified* to get it easy, they deserve it. If not qualified, it is expected they will not get it any easier there than elsewhere. We would as soon possess its degree, gained by a fair examination, as that of any other dental college. We do not touch at all upon its curriculum, or upon its facilities for teaching—whether it affords better scope for students than other colleges or not. We are moved to these remarks by the new principle it proposes to establish, without for a

moment supposing that the professors are insincere in the full requirements they intend to demand. Until the bare D.D.S. means more than it does now, it is not worth holding.

It is suggestive in this connection to add that the very men who most strongly defended the rule of making "five years practice inclusive of pupilage, as equivalent to one course of lectures in dental colleges," are getting their eyes opened to the fact, that those of us who ventured to condemn the principle were not so obtuse after all, and scarcely deserved the bitter, even personal abuse some of its upholders bestowed upon us.

To be continued.

THE FEE QUESTION AGAIN.—We have always considered the Fee question one of those pivots upon which the honor or dishonor of dentistry in Canada must turn. If the practice of dentistry in this country is to rank with a trade in the valuation to be set upon its worth; if our services are to be weighed in the same balance with those of shoemakers and plumbers, where material and mere time are the only standards of charging, and there is little or nothing to be credited to skill, study and science, then it is a black look-out for the Canadian profession, and a glorious prospect for the charlatans. Respectable men, skilful men, studious men will leave its ranks: it will become a reproach to be called a dentist, and the social and professional standing attained within the last ten years will be utterly lost.

Forty years ago in Montreal, dental fees were fifty per cent higher in proportion to the cost of living, then they are to-day. The same fee for extracting a tooth is charged by ninety-nine per cent of dentists, as was charged then: while in other services such as filling teeth and the mechanical branch, the fees are lower! Yet dentistry in Canada has risen since then to the rank of a recognized and legal profession: its best practitioners are better educated, possess better facilities, and can do more for the preservation of the human teeth than the dentists of the olden times. Why should all this be given as a premium to patients? why should not the brains, culture, science and progress in modern dentistry be entitled to higher pecuniary consideration, than the mere mechanical adroitness of thirty years ago? We do not disparage the operations of the best of the

olden dentists. We believe in the aggregate they were faithful and successful, though necessarily working in a more circumscribed sphere. We see their fillings of soft foil to-day putting to shame the boasting of adhesive gold extravagance. But they were largely mechanical and much that was legitimately our work passed out of their hands.

We fully recognize the fact that we must have cheap dentistry; but we do not recognize the fact that a skilful conscientious man is to give ten dollars worth for one, or to put his skill and conscience on a par with the roughness and roguery of the charlatan. Good men should aim to elevate their inferiors, not to degrade themselves, and give quacks weighty argument for their practice. Of course if any reputable man voluntarily falls into the ranks of the "cheap Johns" of our profession, it is his own look out. But his reputation will suffer. He cannot serve two masters: he cannot long charge one class of patients double what he charges another: he cannot fight against the inevitable. We challenge any one to name a single instance in Canada, where success—even pecuniary, followed the voluntary descent of a first-class practitioner to the rank and charges of the "cheap Johns."

While in all the other professions larger fees then ever are obtained, and men are stamped by their fees as well as by their talent, why should not dental fees ascend? One Surgeon in Montreal, recently got $500 for an operation: others $250 and $200. We have known Surgeons to receive $100 for an operation which did not involve half the skill, patience and experience required to perform the ordinary branches of dentistry. Among the increased fees we think now necessary and timely we would suggest the following:

1. Consultations without operation $1.00. In this matter we need a change. If time is worth money to a physician and a lawyer, why not to a Dentist? Regular patients might be exempted from this fee; but we have often been amused at the cool cheek of perfect strangers, who after occupying ten or fifteen minutes in consultation, getting valuable advice and escaping operations, would walk out with scarcely a "thank you."
2. Professional visit at Residence, $5.00. If a physician's visit is worth $2.00, a dentist's is worth $5.00. Why? Because it is the business of a physician to visit: he is out at certain hours doing that expressly: he has his horse and carriage, and may visit one patient many times in a week. But a dentist's business is to be in his office: he disappoints somebody and may lose a large fee during his absence. We are speaking here of

first class fees, because there are circumstances which may induce a dentist to pay a visit for nothing and hire his own carriage. 3. Extracting teeth, $1.00 each. If the ridiculously low fee prevalent in the Canadian cities for extracting is not apparent to the profession we sorrow for them. Few of them will ever build terraces and own much bank stock on the strength of the present tariff. 4. Administering condensed Nitrous oxide, $3.00. Of Mechanical Dentistry we almost fear to speak. It is being degraded by respectable dentists to the level of boot-making; and the charlatans in their low fees for inferior services, seem to be guiding the action and ruling the minds of men who sneer at them for this very fault. The man who can afford to do his very best when poorest paid has yet to be born. We would rather trust a man who will serve us for nothing, than one who will serve us for a song or a sixpence. The "cheap dentist" voluntarily attaches a stigma to his name which undoes all honor he may have received. Every dollar he goes down he makes it the harder to go up again. When fees go down so do ambition and honesty. A mis-fitting coat may be worn out and last as long as if it fitted, but imperfect dental operations are a delusion and a snare from beginning to end. A man who has not enough respect for his own name, present and posthumous, ought at least to have some for his family, whose social standing, happiness and comfort he lowers by the degradation of his fees. There are more successful and less meaner ways of stealing than by cheap dentistry.

North-light or Sunlight.—An exhaustive paper by Dr. Tarra, of Brooklyn, on this subject ought to have commanded more than the flippant discussion reported in the Journals. The Dr. held that steady attention to work in a north-light produced weakness and disease. The Sun was the very life-blood of nature. He recommended a south-west bay window. The discussion elicited some stormy opinions *pro and con.* The objectors to the south-west light seemed to overlook the fact that the patient and not the dentist faces the light; that the eyes are less strained the clearer the light, and that no class of professional men suffer more for want of sunlight than dentists. The brightest light from the south-west shining directly upon an operating chair can be toned down by the use of proper shadings. Simply exposing one's face, arms and chest to the influence of the sun, for a few minutes if the sun is strong, or for an hour if not too strong, is beneficial.

To old "Dead Beats".—If we could have afforded to devote our entire time and attention to this Journal when it was a monthly, it would have never been late But as we could'nt, it was always late. But at any rate our subscribers got all we promised them—twelve numbers a year. The principal grumblers about the lateness were those who have not to this day paid their subscriptions. They could afford to be particular,and we could'nt. Editing a Dental Journal has its elements of pleasure sometimes. In the routine and monotony of active practice,it is joyful to sit down of an evening and read a few of the wrathy letters from subscribers who never pay, and who never intend to, but whom, these wrathy ones—we would not cut off, because of the amusement they afford us. Commend us to your "dead beats" for virtuous indignation. They are the aroma of cool impudence, and the very quintessence of cheek. Probably like fleas and mosquitoes they have their hidden destiny.

Are our Dentists lazy Fellows?—They must be, or perhaps so busy that they have neither time to read nor to write. We have been a good deal among our confreres in Canada, and seldom met one who could not *in conversation* interest us, and often afford us some valuable hint about his practice. As a rule our dentists in Canada know more than they show. Now, why are we not flooded with contributions? We do not expect labored essays: we want practical hints in operative and mechanical dentistry; cases worth recording met in every day practice. Will not our readers pin this to their memory?

Our Advertisers.—We wish to direct attention to the gentlemen who have favoured us with advertisements. It is only fair reciprocity to ask our subscribers to give them the preference of their patronage. Manufacturers who come to Canada to get everything and to give nothing, are helpful to themselves only. Those who give as well as get are the best friends of Canadian dentists who want a home Journal to succeed.

A Dental Colorado. — Our medical friends have an immense advantage over us. When a patient's health is declining, and he will neither recover nor die, but nevertheless worry the wit and wisdom of

his physician, he can be ordered to Colorado. "Go West, young man." If he recovers, so much credit to the physician: if he die, no discredit.

Now we want a climate where we can send the puzzling cases in dental practice. We have a few patients of our own whose obituaries would rejoice us. They are specially commissioned to bring us to an early grave. They have mysterious conditions of their teeth which able physicians and able dentists can neither diagnose nor understand. We have dead beats too, whom a Colorado climate might reform. It would save a good deal of mental profanity which even angels may feel, if we had a Colorado to which we could send some of our patients. We have often wished some of them in a hotter place India, for instance.

Head Rests.—Uneasy lies the head that rests on modern dental chair. The narrow showy things now imposed upon us for head-rests are a nuisance. Patients bob their heads about feeling for the centre of the pad, wishing they had eyes in the back of their heads for the nonce. A strong leaven of common sense is needed among our manufacturers. We have never met an apologist for the small head rests, yet how is it that they are accepted by the profession? The rest should be nearly as broad as the back of the chair.

Knotty Points.—A lad has certain bumps of constructiveness, firmness, destruction and form, and one of the phrenological wise-acres who spin out cheap morality and flattery at seven dollars a head, pats him on the bumps, and recommends his parents to make him either an engraver or a dentist. When possibly all his inherited tendencies and early training show that nature has cut the youth out for a forger or a burglar.

Another lad is fond of driving tacks and shingle nails in the household furniture, chiselling the chairs and planing the doors, has a genius for hitting a nail on the head every time, building a hen roost and neglecting his school, when forsooth, the prophets tell us he is designed for a dentist.

A simple old farmer called upon us a few weeks ago, with his son, a youth of twenty summers. He wanted us to take him as a student, because "Jack's an awfully handy boy about the farm, fixing the fences, and the house, and is *as natural with tools as a dentist*, so we thought we'd let him have a try." We assured the old gentleman that Jack would be far more at home on the farm, and that it would be a pity to spoil a good agriculturist in a poor dentist.

JOURNALISTIC.—We think the *Canada Journal of Dental Science* is the first Journal a Canadian dentist should take. It is'nt as bulky as some of its confreres, but it is a home journal, the only one we have, and if our confreres will not sustain at least one, it speaks very bad for them. This is intended for those who have not already subscribed. But we are not uncharitable or jealous. If our friends can add any one or all of the following to their list, it will do them good. *American Journal of Dental Science*, Baltimore, $2.50. *Dental Cosmos*, Philadelphia, $2.50. *Johnston's Dental Miscellany*, $2.50. *Dental Office and Laboratory*, Philadelphia, 50c. *Dental Advertiser*, Buffalo, N.Y., 50 cts. *St. Louis Dental Quarterly*, St. Louis, Mo., $1.00. *British Journal of Dental Science*, London, Eng. *Monthly Review of Dental Surgery*, London, Eng. *Le Progrès Dentaire*, Paris, France. *L'Art Dentaire*, Paris. *Corresponding Blatt fur Bahnarzte*, Berlin, Germany. *Giornale di Conispondenza pei Dentisti*, Milan, Italy. The latter would do just as well for those dentists who never read.

We do not know if the *Dental Register* of the West, and the *Missouri Dental Journal* have come to grief, as we have not received them in exchange. Will be glad to receive them.

LYING FALLOW.—We ask our subscribers to "read, mark, learn and inwardly digest" the article in this number on "Rest" by Dr. Darby. The extreme monotony of dental practice; the lack of variety; the sameness, has very much to do in connection with the in-door life to make dentists "insane or dissipated." Most of our dentists are prematurely bald or grey: suffer from headache and nervous disorders. They get old before their time. The physician enjoys out-door life amid the variety of the streets, and the short visits among his patients. Advice and visits are not much strain upon the nervous forces. But the dentist is "cabbined, cribbed, confined" in one room for the greater part of the time, in awkward positions, breathing foul atmospheres at times. Dr. Darby strikes a key note of warning which ought to re-echo throughout the land. Fagged bodies and nunnery-like complexions distinguish every dental convention. Our American cousins have more than their share of ill-health. They deserve it. We have seen delicate people in the United States, eating mush, mess and hot cakes enough to ruin a cast-iron stomach. Our cousins want more roast beef, and food upon which they can use their teeth, as well as more sunshine and physical exercise. The Anglo-Saxon race across the lines will die out, or be ridden over roughshod by aggres-

sive European emigrations, if this matter for baby, boy and girl, as well as man and woman is not looked into better.

We have made it a strict rule ever since we began practice to play every Saturday afternoon in the year, besides taking at least six weeks holidays in summer, and occasionally roughing it after ducks. In 1875, we spent four months in Europe; last year over three months in Great Britain and Ireland, and managed this by getting a confrere to take full charge of our office. Of course it is not as profitable to the pocket as keeping one's nose to the grind-stone of work. But it gives tone and tonic to body and brain, and that is better than money. A good deal might be said too about the opportunities it gives one to visit confreres and institutions abroad and to compare notes. We know several of our confreres in Canada who have enjoyed such long vacations, and many who go off at a tangent from business after duck, or deer or fish. They are sun-burned and hardy. There is no reason why every dentist should not do the same: and strange too, to say, those who play the most, seem to succeed the best. Instead of lying in bed they are early risers and accomplish a day's work before breakfast if needs be. A horse-back ride, a long stiff walk upon a raw egg, a hard crust and a glass of water, a swim, a row before breakfast, and most scrupulous cleanliness of body ought to keep any ordinary dentist in good condition. Of course we include a clear conscience and a paid subscription to a Dental Journal.

Just as we were writing this in came Dr. Wells of Cowansville, looking like a hunter of the old time with two dogs and two rifles, off for the Ottawa Woods after deer. No wonder he looks like a voyageur.

Practical Progress.—It is very gratifying to note and know the progress made since the profession was incorporated, and Associations, a college, and a journal first gave life to the work of reform. We have seen operations in gold from the hands of dentists in Ontario and Quebec, equal to anything ever done elsewhere, and in many cases by men who previous to the reform movement, had practised for ten years without knowing, or at least practising the first principle of operative dentistry. We need not go outside of Canada to find skilful operators. But it is too bad that many of our best men are going out of Canada to get a living. The great cry is against the lowness of the fees.

BOOK NOTICES.

AN INDEX OF DISEASES AND THEIR TREATMENT. *By Thos. H. Tanner, M.D., F. L. S. 2nd Edition, Revised by W. H. Broadbent, M.D. Philadelphia, Lindsay & Blakiston, 1877. Price $3.00. For sale in Montreal, by Dawson Bros.*

Tanners "Practice of medicine" is one of the standard works of the day. The index of diseases in these busy days ought to be as useful to the practitioner in busy life as the practice of medicine is to the student. The tabular synopsis comprises the various branches of Abscesses, Bladder, Blood, Bone, Brain, Breast, diseases, &c.; all varieties of Cancer, Deformities, Degenerations of Tissue, Dropsy, Ear and Eye Diseases, diseases of the male and female organs of generation and in fact all the ills to which flesh and bone are heir.

Under the head of toothache, it is treated as from Caries, from inflammation of the Pulp, from Necrosis, and from Neuralgia. The treatment proposed is such as suggest themselves to medical men, who do not assume to take the place of Dentists. With the exception of some vague and some erroneous treatment in inflammation of the pulp, the advice given is good. The work also includes a large appendix of formulæ; references to the use of electricity, climates for Invalid and Mineral Waters.

THE PHYSICIANS VISITING LIST FOR 1878.—27th year of its publication Philadelphia, Lindsay and Blakiston. A well-known Annual which has become so popular during the last few years that the publishers have it ready as early as September, to meet the demand from booksellers and druggists throughout the United States and Canada. It contains a table of signs, Halls method in Asphyxia, Poisons and their antidotes; the visiting list for twenty-five patients a week, memoranda, addresses of patients, nurses addresses: bills and accounts asked for: memo of wants obstetric engagements, vaccination engagements: obstetric cases, &c.

By the catalogues received, we notice that Messrs. L. and B. have made a very considerable reduction in the prices of many of their books.

SCRIBNER'S MONTHLY, ST. NICHOLAS.—Scribner & Co., N. York.—In the whole range of Magazine Literature, there has never been the first

attempt to rival these splendid monthlies published by Scribner & Co. The wealth of illustrations, the variety of subjects discussed, the high-toned character of editorials, and the quantity as well as quality of matter in the *monthly* have given it the leading place, acknowledged so by the best critics of two continents, and an impartial public. St. Nicholas brings a Monthly Christmas Feast to every household. It is a sort of successive hint to our youngsters that Santa Claus is coming. Both magazines are the finest accession to the dentists table, and we strongly recommend our subscribers to give their patients and themselves this monthly treat. The monthly is only $4.00 a year, or 35 cents a number. St. Nicholas is $3.00 a year, or 25 cents a number.

Canadian Monthly.—Hart & Rawlinson, Toronto, $3.00 a year, or 35 cts. a number. This is undoubtedly the leading magazine of Canada, discusses subjects more purely Canadian; is one of the principal centres for Canadian literatii, and deserves much better support then it is given. The English race in this country must learn to be more faithful to the grand responsibility of maintaining an English Canadian Literature. Our French speaking fellow-country-men have done well. We have not done half well enough.

St. Louis Dental Quarterly. Edited by Drs. Spalding & Chase St. Louis, Mo. October, vol. 1, No. 1. Price $1.00 a year. The editors are leading men: the Journal is neat and filled with good matter. We wish it every possible success: but we venture to think our friends claim too much when they claim it to be an *Independent* periodical. From a good deal in it we should judge it intended to represent the Western College of Dental Surgeons, of which the senior editor is the worthy Dean, and the junior as worthy a professor. We claim this Journal to be the only *independent* dental Journal on this continent. When we cannot say anything else, we can at least say that. Having said what we think about the "independent" claim, we will do our friends a good turn by saying in another place what we think of their new departure in dental education.

EPITOME OF THE PROCEEDINGS OF DENTAL SOCIETIES.

AMERICAN DENTAL ASSOCIATION, AUG., 7.

Dr. L. C. Ingersoll read a paper "Is the Dental Pulp essential to the integrity of the tooth structure?" To restore a diseased pulp to health is among the highest arts of professional skill: it involves a knowledge of the pulp-structure and functions, and the conditions of its life.

Oxychloride of Zinc appears to have been considered superior to all else. From reports there is great uniformity of results: if these reports are reliable it must be wrong to extirpate a pulp. They do not appear reliable. Is the exposure always the same in degree? Is the condition of it always the same? but it is treated all the same. Is it certain that the pulp will live and form its covering under the cap? How long after exposure may it be thus treated with success, and in what does success consist? Is it merely a comfortable condition of the tooth? is there not often deception in the tests applied? There are two unknown qualities in every case—vitality and idiosyncrasies: practice must vary in its results. There are "epidemics of opinion as well as of disease."

Reference was made to supposed remarkable remedies which flourished awhile, then collapsed. (*Hear! Hear!* Ed. C. J. D. S). The effort to save the pulp is good. Often too confident that we have succeeded. Most of cases are failures in from one to three years. Many succeed for that time; then result in abscess.

Many cases called exposure are only slight irritation, without inflammation. Another class involves simple inflammation readily relieved. Still another class involves exposure caused by violence in mastication, or in the cavity. These may be all treated with permanent success by care and capping. Where the exposure is of long standing, and is undergoing elementary decomposition, the oxychloride only helps it to die easily and embalms it after death.

Is the tooth-pulp essential to the integrity of the tooth-structure, and to its continuance in the mouth in a useful state? No! the soft tissues must have vitality to protect them from decay; but the teeth will last hundreds of years after the soft tissues are decomposed. Enamel, the most durable animal structure, has little vitality. Children's teeth are more vital, yet they decay more rapidly than adults. The pulp is chiefly a formative organ, and in that function it exterminates itself; in advanced life only a shriveled skin remains. Having completed its formative work

the indications are that it has nothing more to do. The question to settle is when do its legitimate functions terminate? The teeth probably mature in ten years after eruption, though this period may vary. Here the pulp takes its rest. The question is not the preservation of the *pulp* but of the *tooth*.

Dr. Rawl's considers the presence of the pulp necessary to preserve the entirety of the tooth. The paper says, the pulp was only intended to last till consolidation takes place; but when calcification is complete the teeth are of little account, and nearly worn out. Might as well say that when the muscles are formed, the vessels should be cut and the tissues left to support themselves. The dentine is intended to be supported by the pulp, and when it is removed the tooth will disintegrate.

Dr. Barker. If the pulp had been intended to remain only ten years, nature would have removed it. His own teeth had become softened after a fever, but had again hardened, which was affected through the pulp. If the pulp is removed, the periodenteum takes on hyperæmia and goes into abscess. The action of carbolic acid, which forms a protective pellicle and acts as an anodyne, has not been considered in the paper.

Dr. Robertson. The pulp has no connection with the dentine, and therefore cannot supply it with nourishment. Any person who claims that the pulp is of no use has not studied the anatomy of the tooth.

Dr. Ingersoll said he had been misunderstood. He did not deny to oxychloride of zinc and creasote the effects ascerted to them. We have over-estimated the value of the pulp. Twenty-five years ago the practice was to devitalize upon exposures, and if it was thoroughly done the teeth are doing good service to-day. In ordinary cases it might be good practice to use oxychloride, but in bad cases of suppuration it was not best to tamper too long with the pulp.

Dr. Allport. Thirty years ago there was a doubt whether an aching tooth could be saved. It is important to save the pulp, but we have over-estimated its importance. It may sometimes be a nuisance instead of a benefit.

Dr. Atkinson. When men say that the fibrils of the root are not supplied from the pulp, while the crown is, they are ignorant. The fibrils can be drawn out of the dentinal canals. Instead of saying that we have over-estimated the importance of the pulp, it would be more modest to say that we make too little of being able to treat pulps that are in a pathological condition. Dr. Allport asked of what use was the pulp where

abscess exists? he mentioned two cases of abscess while the pulp was alive. Dr. Atkinson said those cases were so few that it was not worth while to inquire.

Dr. Crouse, had never seen a live pulp in a tooth when there is an abscess. He would rather cap than to take the chances of extirpation.

Dr. Rhewinkle. In simple exposure of pulp always save. Where inflammation with some sloughing exists it is different. Oxychloride is deceitful. Pulps treated with it appear to be alive when they are dead. Frequently you have no pulp but an Egyptian Mummy there which may give trouble at any time, especially if the foramen is open and fluids get in there. Would prefer to risk his reputation on a tooth by devitalization instead of capping.

Dr. Morgan. There might be abscess with a live pulp in a three-rooted tooth only. However much we estimate the pulp we cannot over-estimate it

Dr. McDonald. All tooth-structure tends to deteriorate after loss of pulp. Every attempt should be made to save the pulp, and then we can resort to extirpation. Conservatism is the thing for the dentist.

Another Argument for Teetotalism. — Dr. Ed. Palmer, in a paper on alcohol and its effects upon the teeth, treating of its effect upon the membranes, concluded that it contributed largely to the degeneracy of the dental organs.

Dr. G. H. Cushing. — Chairman of the Committee on *Operative Dentistry* read a report which spoke of the materials used in filling teeth, and stated as the result of an extensive correspondence with leading dentists, that the use of tin in combination with gold had been very little resorted to, and that the use of amalgam, as well as non-cohesive gold, had largely increased and was still increasing. Operative dentistry to-day occupied a conservative position, running neither to one extreme nor the other as regards method. In conclusion the report stated that one of the great needs of the present day was the organization of one or two institutions liberally endowed and independent of the tuition of pupils. *The last sentence received great applause.*

SELECTION.

REST.

BY PROF. EDWIN T. DARBY, D. D. S.

The average American, engaged in the active pursuits of life, needs, and his system demands, periods of rest and recreation.

It is impossible for man, constituted as he is, to follow incessantly one train of thought or toil continuously in a given direction without injury to both the physical and mental system—nay, without insanity. The fact that we are an overworked people, both in mind and body, is proverbial, and with each year the truth is becoming more apparent.

That nervous diseases are upon the increase, no one who has given the matter a moment's thought can deny. Consider for a moment the sudden deaths from heart disease, from apoplexy ; the wrecks of mind and body which meet us on every hand ; the care-worn faces and tottering gait which we see in early manhood, but which belong only to later life. Is this because we are physically and mentally inferior to other nations ? No, on the contrary, experience has shown that under favorable circumstances the American people are both physically and mentally equal to any of the old world, and that the impaired health of our people is due al most entirely to the rush with which they pursue their business callings- accompanied with high living and insufficient rest and recreation. There seems to be something in our climate which incites men to activity, and, activity so intensified that we rush through life, keeping (as it were) the engine of our being at the highest rate of speed for the time, not consider- ing that the machine which runs fastest must of necessity wear out soon- est. There are few subjects upon which men engaged in active business life will not talk with more reason than that of rest as the means of pro- moting health. The excitement of business becomes almost a disease, and it is not until the system begins to succumb to the strain put upon it that men realize or admit that it is possible for them individually to fall victims to this disease of overwork.

What has been said of general business life is eminently true of profes- sional life, and especially so of the profession of Dentistry. There are few men in the profession, who have been in regular practice for ten or more years, who are healthy men. Do you not, by a moment's reflection, recall a score of professional friends who are dyspeptics ? whose mind is

just a little off balance ; who, in short, is a little the worse for his ten year's service ?

Is Dentistry an unhealthy occupation ? Followed as it ought to be, it is not. Followed as it is by the majority of men who are so fortunate (or unfortunate, perhaps,) as to have a full practice, it is.

The dentist who works an hour or two at the chair in the morning, and an hour or two in the laboratory in the afternoon ; who takes ample time for his meals, and rests after they have been eaten ; who leaves his office at three or four o'clock in the evening and drives in the park or digs in the earth, may plod on for years, perhaps a score of them, and show no signs of nervous disorder, nor experience any symptoms indicative of failing health. To such an one, and followed in such a way, the practice of Dentistry is not unhealthful. But look again ; in yonder city is your professional brother who enters his office at eight or nine o'clock in the morning, and stands at his chair incessantly engaged in the most delicate of manipulations, and upon the teeth of the most sensitive organizations. until four or six o'clock in the evening, only stopping to partake of his mid-day meal, which ordinarily is but a light lunch. He does this not one day only, but every day from Monday morning until Saturday night, week after week, and month after month. Followed in this way, Dentistry *is* an unhealthy occupation.

But, you ask, is it the close confinement that breaks him down in health ? The mechanic, the watch-maker, the tradesman is confined within doors equally as much, and yet shows less signs of failing health, Is it the hours spent in work that makes the dentist so tired when night approaches ? The farmer may commence an hour or two earlier in the morning, and keep it up an hour or two later in the evening, but he is not fatigued to the same extent. He works equally hard, but he works in a different atmosphere ; he works in the sunlight, surrounded by the beauties of nature. His work in the open air develops muscle, affords an abundance of oxygen for his lungs, and makes him a healthful, happy man. It is not work that kills men ; it is the incessant strain upon our sympathies while inflicting pain upon our voluntary victims. It is the responsibility, which every conscientious man feels, to do the best thing possible for those who seek his services. It is the work of hands, and mind, and heart. It is the effort to keep one's self in one grand equipoise—the effort to be courteous, and gentle, and kind, when we feel nervous, and cross, and perplexed. It is the daily routine of care, the cons-

tant thinking of the same things day after day, week after week, and year after year.

It has been estimated that one-fortieth of the dental profession become insane, and as many more dissipated ; and at times I do not wonder that such is the case. I recall at this moment the history of two men, eminent in their day and generation, who commenced the practice of Dentistry within a few miles of the beautiful lake upon whose borders I sit to-day. The first, after an eventful life, a large and lucrative practice of many years, became dissipated and insane, and died by his own hand. The other, removing from a country village to the metropolis of our nation enjoyed for years the confidence of many, and secured to himself a large and wealthy practice. Of a highly organized nervous temperament, he felt his health giving way under incessant work, and resorted to stimulants, which with him soon became a necessity. With bad habits once formed, he went from bad to worse, and finally died a miserable drunken pauper in that city's alms-house.

Nor are similar histories rare.

That the practice of Dentistry is peculiarly trying to the nervous system I think none who have given it a few years' trial will deny. It is a constant drain upon the nerve force, and requires on the practitioner's part the best care to avoid disastrous consequences. Each day takes from us more than night can give, and by this exhaustive process we soon approach the night of death.

How, then, is the dentist to preserve his health and render himself best fitted to perform his work and prolong his life ?

First : By a systematic arrangement of his time, and, when once arranged, not to deviate from it. I have the profoundest admiration for the man who has courage enough to lay aside his instrument and cease work at three or four o'clock in the afternoon. In my opinion such an one will reap a larger harvest in the end than his neighbor who stands at his chair an hour or two longer each day. There should be periods for rest, and these should be daily. The dentist should spend an hour or two at least of each day in the open air, and, if possible, in the sunlight. He should walk, or ride horseback, row in a boat, dig in the earth, play base ball, or do something which will be as complete a change as possible from his daily work. He should engage in something which will change the current of his thoughts ; something that will bring into action different muscles of the body ; something, in short, totally and entirely different from his professional life.

Second : The dentist should have an annual vacation of at least a month. Eleven months is long enough to pursue one train of thought, one round of duty. He should, if he be a city practitioner, go to the country, where new scenes will be presented to his eyes, new thoughts occupy his mind, and new food delight his palate. Let him spend a few weeks in the Adirondack wilderness, sleeping on hemlock boughs in her forest of pine and hemlock and spruce ; fishing in her limpid streams ; chasing her bounding roebucks, and eating her delicious venison and trout. Or let him go to old ocean, and sail on her restless billows, bathe in her ceaseless breakers, and sleep that sleep which is restful.

When once the careworn, nervous, dyspeptic dentist has gone forth amid scenes like these ; when he has mingled with nature in her grandest forms, he has put himself in an atmosphere of health ; and, whether sleeping or waking, he is drinking in that which rejuvenates his wasted energies, restores the balance of his mental capacities, and refits him for the duties of future years. After a month thus spent, he returns with new desires and new purposes. He enters upon his practice better prepared to perform his operations thoroughly ; a better man, physically, mentally and morally, for they rest and recreation he has taken.

(*Dental Office and Laboratory.*)

HINTS AND QUERIES.

Answer to T. H. in August No.—The Eureka rubber is tough, rather dark, but vulcanizes at 220 in 15 or 20 minutes. I have used it for the entire base plate as well as for repairing.

A. O.—Put some cotton wool in a wide mouth bottle, and saturate it with as much carbolic acid as it will take up. By dipping your pellet of wool in this, you can get all you want at any time. There is no *spilling* if the bottle upsets. Other therapeutical agents used can be kept from spilling in the same way.

R. T. L.—In cold weather you should not even use cold fingers about the teeth of your patients. You should also warm all steel instruments an instant before inserting them. In all cases forceps should be warmed. Somehow or other it hurts less to have a warm than a cold instrument run into you. Try a cold forceps yourself around a sensitive tooth of your own.

R. W. D.—The article on Phosphates is delayed until next number, also the question as to the overcrowding of the profession in Canada.

L. M.—Walker's Vulcanizer can be seen in use in our laboratory, as well as in the laboratories of two confreres in this city. It is invaluable.

CANADA
Journal of Dental Science.

VOL. IV.—MARCH, 1878.—No. 3.

ORIGINAL COMMUNICATIONS.

WHAT IS THE VERDICT?

THE DENTAL ENGINE.

By JAS. A. BAZIN, L.D.S., Montreal.

In propounding this query I shall offer some considerations bearing upon correct judgment in the answering.

Let me first advance the statement that dentists are human beings, and consequently given to lying, cheating, and many other devices of Satan. Also that dentistry, as applying to filling of the teeth, not to speak of the other specialties of its duties, calls for more *unseen and unappreciated* honesty than any other work that is attempted in all the wide, wide world.

The uninformed confiding patient opens wide his mouth, and too often with many dentists try to fulfill the Scripture promise, "that it may be filled," and with this new dispensation of "filling made easy," the patient is not let depart till the utmost farthing has gone into the treasury. These latter days show so many minute fillings, always in a nice place for a drill, that we older members of the profession begin to think that the teeth are not as they were when we were young.

Now such being the truth of the premises, and no one will, I think, deny, what, I again ask, shall be the verdict as to the benefit the Dental Engine has laid upon the profession, and still more important to the confiding public.

That there are dentists with convictions of right and wrong, I would not for a moment deny—men who could not be tempted by any paltry consideration to a dishonest act, whose mainspring of action is the greatest

good to those under their care, regarding money-getting wrongfully as sin of the basest sort. Then there are other dentists who *would* like to be honest, but love of *ease*, as well as money, moves them to see with double eyes, and for the once the step out of the line is taken. And then the third class, and I am afraid the larger, those who are bound to make hay sunshine or not. All is fish that comes to their net, and sufficient to them is it that to-day will not expose to-morrow. They act as if they thought, "Let us pluck this goose to-day, to-morrow we may only have a crow," and with keen prophetic eyes look afar at the may-be and draw the focus to the must-be.

To the first-named, the Engine is a convenient instrument, only in so far as it will, without doubt, do reliable work, or rather assist them to do the possible best for their patients; and it is to these I most earnestly press the question, Has the public been, and will it still be, the gainer by this machine?

Errors of judgment are to be expected, and undesirable results follow the best intentioned efforts, but when the cause is discerned honesty avoids the repetition.

Believing that enamel can only be removed in two ways, either by powdering or clearing, as in splitting wood endways, I fail to see how the forms that must be used in the Engine can speed the preparation of ninety per cent. of cavities that come under our observation, and as in dentine the shaving or slicing being the proper, therefore the best way to shape it, the same objection applies.

Having observed the use of the Engine for a few years, as well as using it myself from time to time, I have had these thoughts forced upon me, and besides have had the evil results of its use in my own office, and outside, painfully brought to my attention.

Retaining point in such nearness to the pulp cavity as in making them the friction has so heated the pulp as to cause death to the pulp, with all its attendant evil. It must be borne in mind that *quantity removed at each revolution, as well as speed, engenders heat*; and if in the old times of pivot teeth and hand work, much stress was put upon the injunction to "keep the files cool and drilling slow" to avoid future ills, how much more is it needful, working near the vital parts of living teeth to keep *our* heads cool, and remember, more haste less speed.

Montreal has been favored in having had dentists of superior skill, some self-taught it may be, but, nevertheless, I venture the assertion that the work done now, with all the appliances to hand, is not equal to that done

previous to the day of the Engine, when hand work alone was the rule. During the past year I have had more than a score of cases come under my care of teeth *lost* by the using of the Engine, not to mention the fillings to be replaced, owing, as I believe, to the *rubbing down* of the softened dentine by the burr, instead of being cut away.

To such an extent has this been the case, I almost always ask, was the whirligig used on this tooth? and as often the reply is, "Yes." Now, if the case is that stated, what shall the verdict be? That it now has a strong leaning against the use of the Engine seems to me to be proved in the many attempts to apply cooling blasts or showers, checks, stop motions and all the paraphernalia of a well furnished machine shop. That it has a place--a small place—near the operating chair, I will not deny; that it is an excellent adjunct to the laboratory is readily proved, and will largely take the place of files and scrapers in finishing plate work.

Finally, should it be given first place in our colleges and schools, will it not tend to dwarf the cultivation of the hand, not to say anything about the readiness with which small and easily filled cavities may be discovered by a new hand, who has his "rent to pay and two small mouths to feed," notably on the lingual face of the superior incisors where the drill will bite so readily.

It was told a person a few weeks since that his teeth were in need of just such, but a most careful examination by another, good light and keen eyes could not find the least defect. The first uses the Engine constantly, it is his "*strong hold*," the other uses it but seldom.

Such cases are not unfrequent here, but how many are snared no one can tell. Unfortunately dental literature is not much sought after by those to whom the Engine is a weapon of evil, and little good may come from the discussion of the question, but I do most earnestly invite the opinion of our elders—those who can look upon fillings of twenty, thirty, and even forty years ago, fresh and bright as the stars. I have some in my own mouth nearly thirty years.

How say you, greyheaded gentlemen, are you ready with the verdict?

THE TURKISH BATH.

As a therapeutic agent I believe the Turkish Bath will yet become one of the popular sheet anchors of the medical profession. I have had a personal experience of it for over seven years, taking it not less than once a week and

frequently three times. I am conscious in my own case, that it is an infallible remedy for nervous headache taken in the early stage. For the last three years I have been led to experiment with it in cases of severe neuralgia associated with the teeth, as well as in periosteal inflammation, where teeth are "ulcerated" and the surrounding parts are in active and swollen sympathy.

The first case was that of a young lady, who had an ulcerated tooth extracted the previous day, with the effect of increasing instead of abating the agony she had endured for three days. At my advice she left my office, anguish expressed in her features, and in about fifteen minutes afterwards was sitting in the warm room of the Windsor Turkish Bath. Temperature 140. To use her own words "I thought I could never undress, my face pained me so much when I lowered or moved my head ; I was not three minutes in the warm room till I felt soothed, and in about twenty minutes I was in a dripping perspiration ; my face seemed to lose its great sensibility. I could press my cheek without any pain, I stayed there thirty-five minutes : went out and took warm showers : was shampooed, and left after an hour and a halt's visit, forgetful of the horrid pain. I took another bath the next day ; but really I know that the first one cured me perfectly."

Now since that experience, I have sent as many as thirty persons to try the same treatment, and have found that it hastens cure in severe inflammatory cases. Through the seven million pores of the skin the excretive organs discharge. By favoring perspiration and the free absorption of oxygen from the atmosphere, it does good where no other remedy would avail. I had a case of trismus, from the late and crowded development of a dens sapientiæ, which was relieved by two baths, and the muscles relaxed sufficiently to enable me easily to get at and extract the tooth.

In any congestive state of the blood vessels which supply the teeth and face, I am convinced it is a valuable remedy, assisted too, by hot flannel fomentations.

I propose to treat this subject more elaborately at another time, and for the present merely wish to recommend the Turkish Bath to the conderation of dentists in some of the complaints it is our province to treat. We have in Montreal the finest built Bath I have ever seen. Its ventilation and general accessories are unrivalled, and under the care of its present proprietor, a gentleman who has had twenty years experience in England, it ought to become not only a great luxuary and a public boon, but a valuable aid to the general physician.

A PLEA FOR AMALGAM.

BY A. W. HYNDMAN L. D. S. SHERBROOKE.

Your article in the last number of the "CANADA JOURNAL OF DENTAL SCIENCE," headed "Are our Dentists lazy fellows" has led me to think, that communications have not been coming in as fast as you would like, and that possibly a few words from, even a beginner, might find their way into your columns, and perhaps be the means of inducing others, better qualified than myself, to give you some assistance in your most important work. I hope Mr. Editor, that you will be flooded with articles, from all quarters, articles too good to be consigned to the flames or the waste basket, and that in consequence you will be obliged to issue the "CANADA JOURNAL OF DENTAL SCIENCE" monthly, instead of quarterly as at present. I think the profession in the Dominion of Canada is well able to support, at least one, real live monthly journal and that too, independently of any college or manufacturing establishment.

The theme I have chosen may be said to be a hackneyed one, be that as it may, I consider amalgam one of the most important subjects of the day both to the profession, and to the public,

What every dentist should strive to do, and the only true system on which to work, is to give to his patients, the greatest possible amount of good, for the least possible amount of money. If we can do this with amalgam, or tin, or any of the cheaper fillings, let us recommend them: but let us first consider, and be certain that we are doing what is *best* for our patients.

I think you will agree with me, when I say, that many of our patients, and in some of our practices, the majority of them, cannot afford to pay for the time and skill employed in making elaborate gold fillings. Now what are we going to do with these? must they suffer with the toothache, and finally be obliged to lose their teeth, because they cannot afford to pay for gold fillings? In a great many instances this is just what will take place, unless we use some of the cheaper fillings. We may use Tin, Hills stopping, or even Oxychloride, in some cases, but on the grinding surfaces of the teeth, gold and amalgam are the only fillings we can rely on to resist the action of the teeth in mastication.

Then the question arises. Will amalgam make durable fillings, for cavities in the back teeth? I contend that teeth *properly* filled with amalgam will last as long as if filled with gold. When we take into consideration

the cavities that are usually filled with amalgam, and the way in which it is often introduced, we are surprised that it preserves the teeth half as long as it does. Is it not a fact, that it is used principally in cavities where it would be impossible to fill with gold, either from the walls being too frail; to withstand the pressure necessary to condense a gold plug; to use the patient's words "not worth filling with gold" or it may be that the cavity is in such a position that it would be impossible (for some of us at least) to properly condense a gold filling. Then again, I think I am warranted in saying, that three fourths of the men in the profession, do not take the time, and the pains, in the preparation of cavities for amalgam that they do for gold. Why? Because they can mix a little amalgam and fill up a cavity of almost any conceivable shape and thus *hide* a multitude of imperfections, in the preparation of the cavity. Another reason, why cavities are not so thoroughly prepared, is on account of their usually much greater size, and consequently greater sensitiveness. Our sympathy for our patients while excavating the extremely sensitive denture so often found in large cavities, is often so strong, that we allow it to interfere with our judgment, and thus we "spare the rod and spoil the child." Now I ask, Is this treating amalgam with any degree of fairness? Of course I am aware of the popular objections to the use of amalgam 1st. That it discolors the teeth. 2nd. The poisonous effects, on the system, from the mercury contained in it. 3rd. Its liability to change its form in the mouth. The first of these objections, can scarcely be said to hold good at the present day, and especially in the back part of the mouth, and I do not think we should use it in the front teeth. The preparations now in use do not stain the substance of the tooth as the other preparations did.

The second objection if, it can be proved it is a very serious one. Tomes says in reference to mercurial poisoning from amalgam fillings. "I have never seen a case in which this result was produced, nor do I know of a well authenticated instance, and I think we may fairly conclude" that the instances are so rare that they need not influence our practice. Now I think if those cases of so called mercurial poisoning were thoroughly investigated, we would find that they all orignated in *an incorrect diagnosis of the disease.*

Many of them that I have known have turned out very similar to the case given by "L D S" in the November number of the C. J. D. S. of "Salivation from pregnancy. I have a case now on hand very much the same as this. It had been examined by a Medical man and pronounced

mercurial poisoning, but it has turned out to be nothing more serious than simple inflammation of the periodontal membrane.

The third objection to the use of amalgam. If care is taken in the preparation and introduction of the filling I do not think we will be troubled much with the fillings contracting in the mouth. One great trouble is, we put too much mercury in our fillings. It is a well known law of fluids that they have a tendency to assume a spheroidal form and especially is this the case with mercury. Hence the benefit of using amalgam as dry as possible. This can be better accomplished by mixing in the hand than in a mortar. It should not be allowed to stand after it is mixed. Haste is an important principal in the introduction of amalgam fillings. Then we should burnish down with warm instruments and get rid of the excess of mercury on the top of the filling. I have no faith in the "wet pack." I think the drier we can get the cavity and keep it so the better. Then we should insist upon our patients coming in after the filling has got perfectly hard, and having the oxydized substance removed from the surface, and the filling well burnished down against the walls of the cavity.

As regards the use of instruments for the introduction of the amalgam every man will have to be a law unto himself, to a certain extent. Some like using the angular and some like using the round headed instruments. As for myself, I believe I can make good use of them both, and do not think I could dispense with either, very well. I do not think we can condense the amalgam with any thing so thoroughly as with the ball-headed burnisher but of course there are cavities which cannot be *all* filled with it. There is a tendency among dentists to rush to extremes. The truth usually lies between the two extremities. Let us then strive to strike the " happy medium" in this as well as other things.

FIRST OR SECOND BICUSPIDS?

BY B. S. STACKHOUSE, L.D.S, ST. ANDREWS.

Some recent discussion has revived the question as to whether the first or second bicuspid should be extracted in the treatment of crowded teeth, where the extraction of one or the other is "fore-ordained."

It seems to me that here as everywhere in practice, extremes are dangerous; and after all is said and done, probably the extremists are more deserving of the name in their assertions than in their custom.

The extraction of the first bicuspid has to me one very serious objection. I should want in my own case, to be sure that he who extracts my tooth *knows how to extract a bicuspid.* Any operator can grip it, and not break it : and so too, any one can grip just enough of my alveolus, and get his forcep just near enough to the transverse process of the cuspid and biscuspid, to remind me for years afterwards in the recession of the gum at the cuspid that he has done me an injury. I have carefully noted the appearance of the gum and cuspid, years after a first bicuspid was extracted, and I have seen enough to convince me that *too much haste* is aimed at both in placing the instrument on the tooth as well as in extracting it. *The importance of not damaging the transverse process should be kept in mind ;* and especially the process of the cuspid. A tooth so deprived of its partition is always as sensitive as dentine to cold liquids, and is by the very exposure, subject to inflammation of the periosteum.

Whether the first or second bicuspid should be removed, must depend entirely upon

1 The antagonism with the lower jaw.

2 The manner in which the irregular teeth are to be regulated.

3 Perhaps the condition of the teeth themselves—whether a decayed bicuspid is better preserved than a healthy one, and *vice versa.*

TRISMUS ASSOCIATED WITH THE DENS SAPIENTIÆ.

BY B.

When the pulp dies from exposure and inflammation, even where slight suppuration has occurred, the prognosis for filling is so often favorable, that conservative practitioners do not hesitate to give the tooth the benefit of the doubt, and attempt its preservation, especially where it has been free from pain for some time afterwards, and the constitution of the patient is neither debilitated, nor diseased. Of such a class of teeth there are none which oftener disappoint our expectations, and terminate in incurable periodontitis than the dens sapientiæ of the lower jaw. The anatomical situation of the *wise-achers*, often abnormally developed and crowded laterally against the ramus, and almost surrounded with mucous membrane, is very unfavorable. Frequently the masseter muscles overlap the buccal cusps, and the operculum of gum, the posterior part, even when the tooth is fully grown. Decaying early, they are often filled before the complete development of the fangs, or at least, before complete eruption, and before the

irritation in the adjacent structures accompanying their protrusion has had time to subside.

The upper maxillary more commonly affords room for free and normal development of the dens sapientiae, both as to period and proportion: and if as is frequently the case, these teeth erupt before those of the lower jaw, the latter have a still more contracted space in growth, and a more unfavorable anatomical antagonism.

The death of a pulp then in a lower wisdom tooth, under these circumstances may in ten cases out of twelve prognosticate alveolar abscess. The law of gravitation seals the final fate of the tooth. Cases may be temporized by free leeching, lancing close around the neck and down to the roots of the tooth so as to reach the periosteum, and after the bleeding has subsided, washing away the clotted blood, drying the parts, and painting with iodine and aconite, followed by a Turkish Bath. But the disease cannot be eradicated. The soft tissues are too rapidly involved in an inflammation which extends to an intolerable degree of suffering and inconvenience. Extraction has to be resorted to. It is easy to one familiar with the treatment of inflammation in other parts of the body, to theorize largely, and perhaps to practice as largely too: but any tyro in diseases of the teeth and jaws, knows how unlike the periosteal inflammation of the jaws is to periosteal inflammation elsewhere. The very difficulty of access, the trouble and risk of reaching the hidden seat of disease, and above all the little value placed upon the teeth which in ninety-nine per cent of a hundred will impel patients to sacrifice them rather than submit to prolonged operations, meets the conservative operator in the face. It is not at all likely that as the world grows older, people will get any wiser in this matter. When the age is getting too fast for men to care for their bodies at all, it is not likely that the regeneracy will begin at the matter of the teeth.

Exceptions to extraction may be made where the wisdon teeth have had plenty of room for growth, either by reason of the natural size of the jaw or a space once occupied by a second molar. But even in these favorable conditions there are always circumstances of development and situation which foretell and seal the fate of pulpless wisdom teeth of the lower jaw.

Among the serious consequences which may result from neglecting early extraction where it is indicated *Trismus*, or in the vernacular, "lock ed jaw", a species of tetanus, is certainly to be dreaded by the patient, especially if he be a man of hearty appetite. Trismus may occur from wis-

dom teeth before they are decayed or even developed. Indeed the large proportion of cases owe their origin to the efforts of the teeth to get free, by pressure at the tuberosity of the bone on the adjacent cancellous structures, and the extension of the inflammation upon the mucous membrane to the periosteum, and masseter and temporal muscles and the parotid and submaxillary glands. Pivoting a root, has sometimes caused partial trismus ; but this may be treated easier.

Many cases might be prevented by the timely extraction of the second molar in jaws too contracted to contain sixteen teeth. But I look upon this old recommendation with aversion, because, generally, the wisdom teeth are of less use, and when crowded, their calcification is less perfect. If it is at all possible by Turkish Baths and therapeutical treatment to cause the subsidence of the inflammation, I prefer to remove the wisdom teeth. I would not only punish them for the mischief they did, but also for the mischief they may do in their determined effort to assert their right to stand on a level with their neighbours. They are intruders and if their company is made up before they come, they should be put out, whether they come in goodly enamel dress or not.

REMOVAL OF THE PULP BY EXTIRPATION.

BY JASPER.

I am one of those plain-sailing practitioners who have not yet given up the old rule of destroying the exposed and inflamed pulps of teeth, and I am prepared to show from my careful experience and note book, that the proportion of my failures in preserving teeth is greater than that of several of my colleagues who attempt capping and preservation. However I have long ago argued my mind away from the use of arsenic for the destruction of the pulp, and wish to say that since 1874, I have not used a grain. Upon the shoulders of arsenic I put the responsibility for the ultimate loss of so many pulpless teeth. The certainty of the poison being absorbed beyond the particular point for which it is intended, the serious risk of using it at all in the highly vascular teeth of children, or in teeth whose fangs are not fully formed ; the length of time needed and the difficulty of removing the decomposed mass, presented to me strong arguments for its abandonment.

Given a pulp which I think ought to be destroyed. What rhyme or reason is there in delaying it the number of hours necessary when arsenic

is used? What "advantage" is there in producing the local and sympathetic agony and inflammation caused often by arsenic? Is there not every rational and scientific reason why this offending body should be removed as quickly as possible, without introducing a poison which spreads itself to the substance of the tooth, the periosteum and adjacent structures? It seems to me in this age quite as enlightened a thing to introduce arsenic around the gum and roots of a tooth for its gradual displacement, as to use it for the devitilization of the pulp.

What is the substitute for arsenic? Simply an anœsthetic; and this is neither original nor wonderful, but was probably done before the writer of this article was born.

The ease with which the pulp can be destroyed, and in most cases removed under an anœsthetic is at once apparent. The question with many is merely one of manipulation. That involves proper instruments and skill. With many it may be a question of remuneration. That involves education of the patient. I doubt if there is one sane patient alive who would willingly choose arsenic at fifty cents to anœsthetic at two dollars. There are, we know, people who could not pay two dollars. That involves a matter beyond the scope of this article.

Given now a pulp to be extirpated. I open the cavity freely with chisels, remove as much of the decomposed dentine with spoon or other excavatus as the patient will let me. I apply the rubber dam: insert a gag—if nitrous oxide is to be given: have instruments at hand adapted to make one clean surface cut over the pulp, and others barbed to run into the pulp; as well as a strong flexible steel one which will hook out, any detached bits. I now give the anœsthetic; and having good light, good instruments and a dry cavity, I *can operate longer than when extracting, because there is no sort of shock.* In this way the use of nitrous oxide is increased in value.

About remuneration. That is the great hitch now in Canadian dentistry, and may discourage many. Now that people can find dentists who will sell their professional reputation and dishonor their craft by entering the arena of cheap quacks, the old ways of doing a thing will prevail with many, and progress be hampered. But I find no trouble with reasonable people who can pay; and I consider this extirpation of a pulp under an anœsthetic as worth treble the fee charged *to extract* the same tooth.

DENTISTS AS MEN OF BUSINESS.—No. 1.

BY AN OLD DENTIST.

In the early career of almost all respectable Dentists, they are considered legitimate victims for patronage, by that class of patients to be found in every community, who run the gauntlet of all other Dentists in the locality, and whose motto may appropriately be said to be, "Base is the soul that pays." I say all "respectable" Dentists, because the "dead-head" patient will not descend to submit his masticaters to a cheap practitioner, or one of questionable fame. You see the work of the leading practitioners only in his mouth; you see large and difficult cavities filled with gold; and without *then* knowing the circumstances, your opinion of one who apparently did not consider previous cost in the care of his teeth, is very much exalted. But when you are numbered with the victims of his patronage, you can then understand the depth of his virtues, and the refreshing impudence which at presentation of your account, grins at you from the grinders you took so much trouble to attend. The bare idea of ever paying for your services, never once entered his head; and you need not be surprised if you learn that your gratuitous patient actually considers he has been of some service to you in your early career, in showing you in your tender years and when you have little to lose, the necessity of having more practical astuteness and more thorough ideas of general business. The race of such patients is sympathetic and they recommend you, one to the other: they scent you out, as the hound finds the fox; and well for you, if your patience and your capital are not exhausted before you discover the systematic cheat. With such patronage most of us have had to contend; and we would certainly be of great assistance to one another, if we could open a Black Book in each locality and for mutual protection, there record the names of these black sheep: and possibly, finding no engagements open in their tour from office to office, the cash might be forthcoming, and they made honest in spite of their teeth.

Professional men, excepting lawyers, of course whom Burton calls "gowned vultures," lose very considerable year after year, through a deficient knowledge of the general details of business, and loose systems of managing their accounts. There is nothing, of course, in the educational curriculum of the College or private tuition, to instruct the dental student in rules of business which he cannot have learned at school; and

indeed there is not much more, saving the bittter experience already referred to, in the professional life of one who is in active practice. Perhaps the education of experience is more enduring and wholesome than that of early training and forethought, but the most of us can well afford to be spared these lessons in our comparatively quiet careers. And in this connection it may be well to refer to the incalculable advantage of having the advice of a friend, possessed of a thorough knowledge of the practical operations of business affairs, for it must, I think, be admitted, that Dentists as a class are not good men of business.

Men who labor honestly in our profession do not labor at ease. True, their nightly rest is undisturbed, and they have more leisure than the physician ; but on the other hand, they have not the open air walks and drives, and the healthy excitements of out-door life which makes life less monotonous to the physician, and without which he could scarcely survive. Working hard then as we do, and feeling that every dollar is well earned, it is natural that we should interest ourselves in the matter of fees, and in creating harmonious systems for our own protection and that of the public. There are one or two practical points to which I propose drawing your attention, and which I trust may provoke some discussion and agreement.

The subject of Professional Fees is now agitating the Canadian profession in all parts of the Dominion, and the depreciation of prices and consequent depreciation of skill, and associative quackery, is a subject demanding consideration by those who desire the elevation of the profession. This question should be looked at in a more practical business way. You and I to-day pay nearly double for everything we need to what we did ten years ago : rents are higher, our necessities for business are greater now in spite of the temporary stagnation in trade and commerce, and the people are better able to pay for dental services than they were ten years ago. In every other profession, trade and business, prices have been raised : our servants demand higher wages. Yet the tendency is to lower dental fees, without any demand from the public for such reduction. The prices in Canada for dental operations are so ridiculously low compared to the fees obtained in the United States : yet it is well to remember that cheap dentistry in all countries is being associated in the public mind with poor dentistry, and in many cases with imposition. There are many excellent reasons why respectable practitioners should sustain professional fees, and not trade prices, and let quackery and cheap dentistry be associated as they are and ever have

been. The cheap charlatans lay before their patients the exact cost of material, and think they thereby show an overcharge on the part of the best class of dentists. I think we ought not to conceal the fact that we do not altogether consider cost of material,—though it is well known, that the cheap charlatans do not use the best teeth or the best filling,—but that we charge professional fees, not trade prices, and that the difference between an honest and a cheap dentist, for I defy any one to prove a cheap dentist to be a strictly honest one—is exactly the difference between an honest physician and a travelling mountebank. Throughout Canada we have most daring quacks, whose dental education extended over a few weeks, and whose whole professional career has been marked by the most arrant imposition. One of our first duties to the public is to expose these charlatans to the uttermost. There are no greater enemies to themselves than these practitioners, because they who respect their profession, and who spend time, money and thought for its progress, would gladly aid them in any way in our Societies, and in our private offices to improve. But it is not surprising if you are told that you cannot teach them anything they do not know! In the matter of fees, a more equitable system might be adopted by classifying practitioners according to their own fee standard. A Dentist who says, "I am a very cheap dentist for any one who wants low fees, and a very dear dentist for any one whom I can make pay" is a rogue at best. With your permission I will continue my observations at a future time, when I propose to give some hints about appointments, the day book, ledger, accounts, &c.

PROCEEDINGS OF DENTAL SOCIETIES.

NEW YORK ODONTOLOGICAL SOCIETY.

DEAR MR. EDITOR,

As the New York Odontological Society has just closed another of its large meetings, I take occasion while events are still fresh in memory, to send you a brief account of the proceedings. Before doing so however, I will recall for the benefit of your readers what this Society is and has been doing. That it is local so far as habitation is concerned I need not say; that it is general so far as membership is concerned will appear whenever its list of members shall be published, as it embraces the very best men in our calling both in this Country and in Europe, so far as they have become known to the Society, and have manifested their

willingness to become associated with it. Of course the standard for membership is high; no associate being accepted unless he is a graduate, and has otherwise approved himself to his professional brethren. Consequently the meetings are attended by a class of dentists seldom if ever brought together at any other time.

The sentiments of this Society is decidedly toward a higher education, and it does not approve of *the disreputable proceedings which have resulted in giving diplomas to multitudes of unworthy men.*

It is strongly given also to hearing both sides of a question; so that as you may have seen, subjects often appear and are enlarged upon before the Society, that are entirely disapproved of by the majority of its membership.

You may imagine therefore that a pretty intelligent company was to be found at this meeting, at which about 150 were present, including representatives from as far west as Buffalo, as far east as Boston, and as far south as Philadelphia, and from many intermediate cities, including Hartford, New Haven, Springfield, Providence, and others as has been the case heretofore, those who have not attended the other large meetings of the Society, pronounced it "marvelous," one of the best gatherings of dentists that they ever saw, &c., &c.

I enclose you a programme of the meetings; the first session of which was held at the house of Dr. A. C. Hawes, who spread a bountiful repast, after the debates of the Society had closed for the evening. I say debates; I should have said monologue, for the whole evening was occupied by Prof. J. Foster Flagg of Philadelphia, in announcing to the Society and its guests, his views on the subject of plastic fillings for carious teeth which he contends, as you will see by what follows are more durable, easier of insertion, less painful, and far less expensive than any other forms of filling material.

But it will be better to give you an abstract, of what Dr. Flagg himself said, which I will supplement by giving you a short sketch of the rest of the proceedings.

Upon taking the floor Dr. Flagg said, that he considered himself "a modern Daniel in a large sized lion's den," or rather, "a small sized David before a big Mr. Goliah," and that he expected to get the better of Goliah, and make him a little sick. He stated that the first article of his creed would strike the giant full in the mouth, but as he was quite used to being in the minority, he still felt happy. Addressing himself to

the audience, he said, "you can scarcely have an idea what an out and out heretic I am." I am a worse one than I was 22 years ago, when Dr. Robert Arthur announced his views about leaving decay in the cavities of carious teeth. He was attacked by J. D. White, whose office doors at that time swung to and fro like an electric fan, while Robert Arthur had to wait for patients. The Faculty of the Pennsylvania College condemned Robert Arthur, but would not interfere with his teachings. Dr Jack and myself alone accepted the views proposed by Robert Arthur, that decayed dentine should be left, when the pulp would uncovered by taking it away, I can't shoot this gun off at once, some one must pull the trigger, and fire it off at me; and it may as well come now as ever. Elisha Townsend (glorious be his memory) told me as a young man, to begin experimenting upon one thing if no more, and that was, to experiment upon his amalgam, to see its relative merits as compared with gold for saving teeth; for he found that he could save teeth with amalgam that he could not save with gold; and if Elisha Townsend could not save teeth with gold, who could? and if gold fillers revere Elisha Townsend, amalgam fillers certainly do.

Now, while I don't agree with any of the gentlemen in this room, perhaps that is no reason why we should not agree to disagree. All that I have to say, I propose to say in perfect kindness, and with due regard and respect to the feeling of others; and I want to beg kindly and considerate treatment for all those who may chance to differ from the usual orthodox views in regard to these matters. It has been very much the habit to speak of those who use amalgam, or other plastic fillings, as plasterers, as men without skill to put in gold filling. Now don't call names any more, don't say plasterers of amalgam; and we don't say "punchers and pounders." Let us talk respectfully to and of each other, and we shall the sooner arrive at a good understanding with each other. Now for the first article of the new departure creed,—I will first give the *accepted* views of modern dentistry.

1st, Gold is the best thing to save, we say and mark well the form of words that I shall use while it has been carefully considered. *We say* that in proportion as teeth need saving, *gold* is the *worst* thing to save teeth. For 15 years I filled with gold and can show many fillings that are as good now as then, but the frail ones failed. The first 250 fillings I ever put in were filled with amalgam at Elisha Townsend's suggestion; the next 250 were filled with gold, and these I set myself to observe. I did not undertake to discriminate nor use judgment, but took them as they came.

In these experiments after 6 years observation, I filled 6 per cent. of all teeth that came into my hands with amalgam. The next year 12 per cent. with plastic fillings, (and I have many gutta percha fillings 20 years old), the next year 18 per cent., the next year 24 per cent. and so on until this 17th year, until I might according to this ratio, to put in 162 plastic fillings out of every 100, but I am not equal to this emergency. So now I use nothing but plastic materials, save a few tin fillings, put in for experimental purposes.

In my practice, gutta percha is A, No. 1, Amalgam, No. 2, Tin, No. 3, in point of numbers. Prof. Morton expressly says, "all chemical action evokes electric disturbance." The presence of any metal which is a good conductor and which is itself unattacked, must tend to disintegrate bone in the presence of an acid. Now tooth substance is sufficiently near bone to have this statement true of it, and I don't want any better authority than Prof. Morton, who is probably one of the best analytical chemists in the United States. But I am met at the outset with an answer that I have heard ever since I was a boy, viz., that if gold is perfectly adapted to the walls of the cavity of decay, there can be no fluid between it and those walls, and there can be therefore no chemical action, In reply to this I ask ; If there is no chemical action when the gold is perfectly adapted and don't leak, why don't you put it in so ?

Article II.—Teeth must be filled either by contour according to the view of our friend Atkinson here, who has to put on a mansard roof for the spirit of his broken down teeth to occupy ; or else they have to be slotted wide apart, after the manner advocated by our friend Bonwill, on my left. Now we don't believe that either has much to do with the result, that is the way we get over that.

Article III.—" Failure in operations is mainly done to defective manipulations." If it is, why don't you manipulate better ? Now I have been tabulating for a long time, and my tables include the work of a *great* many first class operators, and here are some of the results. To 100 gold failures last year, 86 have been tabled this month, and that shows how you are going on to make failures more than ever. *We* say that failure is mainly due to incompatibility of filling material with tooth bone. That is the way we get over that. Now when we take some plaques of ivory and fasten Gold, Tin, Amalgam and Gutta percha to them, and put them into a weak acid solution, we find that the ivory with gold in contact loses notably more than any of the others. Let him who has ears to hear, and eyes to see, let him learn.

Now gold fillers say that, Article II. "any tooth that can be filled at all can be filled with gold." Well a man can walk from here to Broadway, on his hands, but that is not the best way. But there are teeth that can be filled, that cannot be filled with gold. A tooth that can be so treated as to be satisfactorily filled with any thing is worth filling.

Article V.—"Dentists who are unskilled and unscrupulous, fill with tin covered with gold; thus causing galvanic action, pulpitus, loss of pulp, abscess and loss of tooth." 15 years ago, it was the common practice in my office to fill teeth in that way. That was perfectly satisfactory until we learned better. *We* say, skilful and scrupulous dentists fill with tin covered with gold, thereby saving the teeth, preventing decay, pulpitus, loss of pulp, abscess and loss of teeth.

Article VI.—"A filling to be good must not leak." We say, a filling may be the *best* known for a tooth and yet leak badly. How do we maintain that point? it depends upon what leaks, how, upon what and into what. I have wished to establish the principle if true, that some other material than gold might be better than gold for some classes of teeth. I have never removed; and I have never asked a name of the operator who put them in, and the amalgam and gutta percha that I have put in to replace their gold fillings, have lasted twice or thrice as long as the gold, and are still preserving the teeth. That is my record.

Article VII.—"Gutta percha properly used is good enough for temporary fillings." *We* say, gutta percha properly used is the best filling material that we possess. Dr. Hawes, saw a patient the other day in my office and found fault because the gutta percha was cupped; but said it was still good enough for the present. That filling had been in 21 or 22 years. I told him I did not regard that filling as permanent, and should not until it had been in about twice as long as it already had. We experimented 26 years ago, on some poor miserable wisdom teeth; they were too poor to fill with gold. 7 small and moderate sized fillings of gold were put into that mouth, but the wisdom teeth were not regarded as being worth filling, and so they were filled with gutta percha and amalgam. Last week I replaced the last gold filling, and the amalgam and gutta percha were all as sound as ever, and the teeth were well preserved. I have obtained the admission from a few dentists that a real good gutta percha filling is better than a poor gold one; but I say, that a poor gutta percha filling is better than a good gold one. The next article is; "Amalgam "per se" is a poor filling material." This is the accepted belief. It is good enough for poor patients, poor teeth,

poor workmen and poor places.—*We* say Amalgam "per se" is an excellent filling material. You say, "amalgam has failed," of course it has; but in teeth that you have filled with gold failed, and finally filled with amalgam, as a last expedient. I have tabulated 22,000 fillings in the last 15 years, and it was a big work; took all my heart, out of these 22,000 fillings, 71 per cent. of the gold fillings failed and had to be replaced; 54 per cent. of the amalgam fillings failed, and many of them were put in by slovenly operators.

The gutta percha fillings were put in in selected cavities where they were not subjected to wear, and only 8 per cent. have failed in eight years. Mainly red gutta percha was used. Now we don't know how to use gutta percha. Read Taft on Operative Dentistry. He says: "Put a cold burnisher on a hot gutta percha filling to prevent contraction." Think of it! To *prevent* contraction; and this is your standard authority on operative dentistry. Gutta percha used in the proper places is the most permanent of all our materials for filling, because it is a poor conductor. Now you see gutta percha is the best filling material, and yet you can't make tight filling with it; and the truth of this statement you can test at your leisure.

The final article is, viz., that "A plastic material lowers the standard of dentistry, thereby reducing its usefulness." Yes, it lowers the standard which makes a good gold filling a necessity, but infinitely raises the standard of dentistry that has for its end the saving of teeth. Now about amalgam. Here are a number of specimens, all of them having been worn in the mouth from 12 to 17 years, and showing, as you say, not a particle of discoloration. This shows that you may introduce amalgam so that the same result can be produced that I have found: viz., that in 100 filled teeth, those filled with amalgam are less discolored than those filled with gold. I have a list of over 1300 patients who have been under treatment since childhood, and five teeth are all that have been lost in 22 years, as far as I have been able to discover.

At this point the meeting was adjourned until next day.

The first paper at the morning session was by Dr. Henry Chase, of St. Louis, on "Some Experiments in Plastic Fillings."

Dr. Barker made a few remarks on the general subject, and he was followed by Dr. M. H. Webb.

The truth of this whole matter seems to be just this: If the operator does not possess the precious material within himself, he cannot produce successful results. If practitioners can so perform operations with gold as to make filling moisture tight, then there is no chemical action, and

no currents, and gold is the best material to use; but if one does not possess the requisite ability and cannot so perform operations with gold as to make the filling moisture tight, then he had better insert tin foil or even plastic material, such as amalgam, for the reason that oxydation may to a certain extent retard, and in rare instances arrest the progress of caries. If this be true, then the results which follow the use of plastic materials may be better than those which follow the use of gold in the hands of very many.

Dr. Dwinelle—I don't know what you were talking about when I came in, but I have a few remarks to make about the tirade of words that were heard last evening that were as meaningless as they were voluminous. The ideas advanced were abominable. It is an infamous doctrine that we heard last night, that we are doing more harm than good; and when we are told by the missionary who comes among us to propagate this string of doctrine, that there have been only five teeth lost in 22 years for 1300 patients, I don't believe it.

Although I am the father of contour fillings, yet I use amalgam every day, and am proud of it.

In reference to the leaving the nerve of teeth covered by decomposed stone, (Dr Dwinelle evidently meant the *pulps* of teeth covered by disintegrated dentine), that doctrine was advocated by me 30 years ago, and published, as is shown by the book which I hold in my hand, from which I will read a few passages.

Which he proceeded to do.

Some of the gentlemen present expressed their inability to get good gutta percha now a-days.

Dr. S. B. Palmer says, "We can use gold or amalgam or anything else to save teeth, but similar causes will always produce the same effects. Any agent placed in the teeth while they are immersed in the fluids of the mouth, always increases chemical action. Now the question is, which agent does this the best?

Dr. L. D. Shephard advocated the adoption of some method whereby the teeth of the multitude could be saved; and stated that while we take care of 1 per cent. of the teeth of the 10,000, 99 per cent. are left to destruction.

In regard to Dr Flagg's records, of which he told us last evening, I am not able to place the same degree of confidence in them which he does. We all know how liable patients are to make mistakes, even in our own offices, with the records close at hand, how often an operation

that is said to have been performed a year ago, is found to be from three to six years old, how much more liable then if the patient passes into other hands are they to make mistakes, when their memories are less liable to accuracy than in our office, and surrounded by influences tending to refresh the memory. I question, therefore, the accuracy of all Dr. Flagg's records statistics, save those of his own work, and that only so far as he goes by a written record. The information to be obtained by hearsay is not reliable; and the only way to arrive at accurate results is for each one to keep his own records day by day.

Dr. Bronson called attention to the fact, that a battery must be composed of *two* substances connected by a conductor; and then only electrical or rather galvanic action proceeds.

Dr. Baker offered the same resolution substantially that broke up the American Society of Dental Surgeons nearly 30 years ago. Profiting by the experience of the past, the Society declined to consider the resolution.

Dr. Brockway regretted the unfairness of the manner in which the advocate of any doctrine presents their views. He does not undu Dr. Flagg to be so extreme as he has been represented. But he understands, Dr. Flagg to advocate plastic filling for teeth that are so frail that they cannot be filled with any other kind of filling.

Dr. Bogue asked if he might be allowed to propose a few questions to Dr. Flagg. These were, first, whether he correctly understood that out of 1,300 teeth treated by Dr. Flagg, by plastic filling in the last 16 years, not one has been lost? Dr. Flagg replied, that, that was a correct understanding. May we then infer that you consider yourself able to save all teeth? and have been able for 20 years so to do? Practically yes. But have you not changed your mode of practice within 20 years? "Yes, many times. But if you had 20 years ago a mode of practice by which you could save all teeth, why did you change? In hopes every time to get a better material. Dr. Daboll, has not learned from Dental publications that gold is the *worst* material for filling teeth. Dr. Flagg, "I did'nt say so," Dr. Daboll, "Well, for saving teeth," Dr. Flagg, "Yes, I said that," Dr. Daboll, "well there is little difference." Dr. Flagg, "there is a big difference;" the statement was that just in proportion as teeth need saving, gold is the worst material for saving teeth, and that the more a tooth needs saving, the less can gold do it.

11.20. Dr. Marion's paper, no debate, followed by Dr. Kingsley. Further remarks by Drs. Louis Elberg, and S. Pearl Andrews.

Steven Pearl Andrews followed out the subject of Dr. Kingsley's paper. His remarks were confined to giving distinctions between the formations of the different vowels and consonants.

A paper by Dr. Farrar, was then read on the subject of the treatment of alveolar abscesses involving necrosis, illustrated by experiments. Dr. Atkinson in discussing the paper said we had a jumble last night, and a worse jumble to-day.

A bone from a beef steak is not a specimen of necrosis. None of these specimens are necrosis; so far these experiments have no value in the paper if only it could be got out of it. What is dead bone? Is it dead simply because it is dry? Is it in the same condition as though in a state of retrograde metamorphosis. How does bone behave in the human body in necrosis, on the dead side chemical, on the living physiological phenomenon occur. The pyogenic membrane is really one of the steps that make transitions between the dead and living.

Dr. Rich regretted that Dr. Farrar had concluded these experiments without sufficient accuracy in the preliminaries, so that he does not care to comment on the experiments.

Dr. Hill followed, detailing the first use of sulphuric acid in St. George's Hospital, in London, in 1870, and published in "Braithwaite's Retrospect." He detailed the case of a young lady who came to him, who moves in the best society. He found a loose bicuspid discharging pus. He treated it to 1 of acid to 4 of water, and he got no effect on the flesh, though he spilled it on her face; but he squirted in these all he could, letting it run all over the mouth and gums. Four days of this treatment, and now not one drop of pus, and to-day he used aromatic acid for its action on the soft parts, but he feels that no matter what the strength of the acid, it is soon neutralized by the lime of the bone. You may soak a piece of necrosed bone in acromatic sulphuric acid a week and you will get no action to speak off.

Dr. Rich then objected to Dr Hill's mode of treatment, and mode of presenting his subject, said that commercial acid contained arsenic and other substances, so that you never could know what produced the effects that supervened. Such a mode of procedure is foolish, as well as unscientific, and he regretted to see such a presentation of it on this floor.

Dr. Hill says, A chemist said to me that the eating qualities of commercial sulphuric acid were just as good as any other kind of acid.

Dr. Rich inquired what he meant by the eating qualities of acid? Considers that a still more foolish presentation than the other.

Dr. Atkinson wished to correct a matter. He stated that between 1836 and 1841, sulphuric acid was used by his father-in-law in a case of necrosed spinal process; but he gave due credit to Dr. Pollock in this last instance, and he never fails to give credit for anything.

Dr. Thomson's paper was next read on the "Wisdom Teeth, in connection with the hypothesis of the ultimate suppression of the teeth in man."

Dr. Kingsley strongly dissented from the views expressed in the paper, and thought it was going a long way too far, because an occasional failure to erupt the wisdom teeth is met, and thereupon to build up a hypothesis like this.

Dr. St. George Elliot read a paper on Chinese Dentistry, interspersed with remarks on Japanese Dentistry from personal experience and knowledge.

After which the meeting adjourned.

EPITOME OF PROCEEDINGS OF DENTAL SOCIETIES.

CONNECTICUT VALLEY DENTAL SOCIETY.—Dr. Haskell read a paper on Mechanical Dentistry from which we make the following extracts:

"Our first anxiety is to have proper plaster for the impression, finely ground.

On examination of the mouth, if we find the ridge is quite hard and no soft part, we take an impression of plaster above if we have a suitable-shaped cup; if we have not quite the shape we desire, we build up with wax, or cut away or bend the cup until it is approximately the shape of the jaw. If we find part of the ridge is absorbed and the process gone, leaving the parts soft and flabby, we take an impression with wax or modeling compound first, then, after with as little plaster as possible.

I know it is the universal practice of some of our best dentists to *always* take first an impression in wax, gutta-percha, or other compound, and then after with plaster. But I consider this practice unnecessary.

The impression taken, the selection of the teeth I believe to be the next important point. If, by mistake we select teeth that are in form, size, color or expression defective, our productions however satisfactory to our patients, are nevertheless failures, and must bring a blush upon the cheek of the true artist, whose perception of harmony detects the frightful incongruities.

A dentist who constructs artificial dentures as they should be, must possess both artistic conceptions and the artisan's skill to execute, in

order to meet the exigencies involved in his operations. In one instance he has to insert short teeth, in another long. The lighter and darker shades, the peculiar tint and tone of the teeth and gums, size, form, position and harmony with the other features of the person for whom they are intended, require the finest powers of discrimination and manly execution, in order to conceal the art employed in forming them.

No set of rules can be given for the selection, arrangement and adoption of artificial teeth that will apply to every case. Close observation, a careful study of nature—particularly of the temperaments and a well-applied experience, can only make one proficient in this interesting department of our profession.

The various devices for retaining the plate in position, and the various patented "sells" that we have been more or less *bitten* by, I do not propose to discuss in this essay. But for myself, I believe a well-fitting plate, without any chamber-ridge, soft lining, flexible edge or rubber disk to make the mouth sore is best, in most cases for general use."

Out of the discussion which followed we elicit various opinions. A case was mentioned where the patient had nearly all the skin taken from the roof of the mouth, by removal of an impression where the plaster was mixed too dry. Gold for base plates was generally recommended; some found it objectionable. Plates should not be worn day and night, this causes an inflamed condition of the mouth. Air chambers should not always be used. Continuous gum work was highly referred to by some. Large numbers of Dentists of the present day cannot even repair a gold plate. Bad fitting or constantly worn gold plates cause as much inflammation of the mouth as vulcanite, &c.

One of the pleasantest episodes of what was evidently an interesting meeting, was the personal introduction to the Society of one of the most deservingly honoured members of the profession, Dr. S. C. Barnum, the discoverer of the Rubber Dam. The Dr. gave the following history of the discovery of the dam: "At the time when the idea of the rubber dam dawned upon my mind, I was practicing in Monticalls, Sullivan Co., New York. It was the result of much persecution from the inroads of saliva. I had spent many an hour, weary and distracted, battling against its incursions. Many a sleepless night had I over sad failures, chagrined and helpless before the evening, with the one absorbing question ever before me unanswered, "How shall I keep the cavities dry?" The answer came; and I may say that I was led to the discovery in this manner. In plugging cavities near the gums, I had adopted the use of rubber rings or ligatures around the necks of the teeth, crowding them

well up under the free margins, thereby cutting off the *oone* from them. Also in plugging the upper teeth I placed a piece of oil skin beneath the napkin, it preventing the accumulating moisture in the floor of the mouth from being taken up and soaking the napkin. These two things led me to the thought, can I join the ring of rubber to the apron of oil skin?

In the fall of 1863, I procured some sheet or elastic rubber cloth for the same purpose I had been using the oil skin. How soon after that the idea of cutting a hole in the rubber and slipping it over the tooth came to me, I cannot now call to mind; but this I have well fixed, that on the 15th day of March, 1864, a case presented itself of a cavity in a lower molar, standing alone, on the left side, in a mouth as wet—well, as water gushing from every duct could make it. In a sort of half desperate way, and partly to try the new idea, I cut a hole in my napkin protector and over the tooth it went. There I found I had the ring of rubber and apron combined! There was the rubber dam! and from that time until it was presented to the profession the following summer, I developed step by step, many of its important points.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

The annual meeting of the Board of Examiners was held in the City of Toronto on the 5th March, and four following days. All the members were present during the Session. No business of importance excepting the Examination was before the meeting. A conversation on the expediency of raising the standard of the Matriculation Examination resulted in the appointment of a Committee to enquire into the matter and report at a special meeting in July. The unusually large number of twenty-five Students presented themselves for examination. In consequence, probably of the large number who failed last year, extra care had been given to study and preparation, so that on an equally severe examination only four failed, as compared with last year. Two others, however, were assigned a special examination in two of the subjects in July next.

At the last meeting of the Board it was decided to offer for competition a College Gold Medal and a College Silver Medal, to be awarded to the candidate making the highest and second highest number of marks respectively.

This offer had the effect of perceptibly stimulating the diligence of several of the candidates who were determined, if possible, to win the honors. The result has been sufficiently satisfactory to induce the Board to offer

similar medals for competition at the next examination. The following are the names of the successful students, viz :—

David Watson, Brussels, College Gold Medallist; G. H. McMichael, D. D. S., Waterford, College Silver Medallist; Messrs. W. F. B. Colter, John Robertson, H. May, T. H. Husband, F. A. White, H. Rea, D. D. S., A Lough, A. W. Spaulding, W. M. Bruce, A. E. Ahrens, S. Southworth, D. D. S., D. McPhee, C. D. Wortman, F. A. Eakins, W. R. Nobbs, R. T. Kenny, and J. H. Parnell.

The Examiners note with satisfaction the high excellence of most of the operations in the mouth, which were submitted by the students for inspection. At the same time they are obliged to express their disappointment at the want of skill, taste and neatness displayed in many of the artificial dentures which came under their notice. With few exceptions there was great room for improvement in this direction. They can only conclude from what they have seen that many of the practitioners throughout the country are very careless in this branch of their profession. Students, as a whole, are just what their perceptors make them. We certainly hope to see a marked improvement in future examinations.

The Board having passed a by-law at the last sitting to provide for an examination of Licentiates of five years standing for a Diploma conferring the title of Master of Dental Surgery, three gentlemen, C. S. Chittenden, D. D. S., of Hamilton; J Branston Willmott, D. D. S., of Toronto; Luke Teskey, M.B., M. C. P. S., of Toronto, presented themselves for examination. The examination, which was written, being satisfactory, they were recommended for the Diploma, which was granted by the Board.

The title of M. D. S., was also conferred upon F. G. Callendar, of Toronto, without examination, in recognition of his high standing in the profession.

The School of Dentistry in Toronto is doing good service for the profession. The Session just closed has been very successful. Thirty students have been in attendance. Of these eleven were juniors and nineteen were before the Board to be examined for license, thirteen of them being successful. The Faculty of the school have established an examination for honors, and also offer for competition among the senior students a "Faculty" Gold Medal. The successful candidates this year are:— David Watson, Faculty Gold Medallist: G. H. McMichael, D. D. S., and W. F. B. Colter, Honor men.

The next Session of the school will open on the first Tuesday in November. The medals and honor certificates will be formally presented to the recipients during the meeting of the Ontario Dental Society in July next.

EDITORIAL.

THE "COSMOS" RAMPANT.

In noticing the first number of a new journal, which, while being the organ of a dental college claimed to be "independent," we ventured the assertion in our last number, that this unpretentious Canadian bantling "is the only independent journal on the continent." The continent is a big one—this claim is a big *fact.*

The Cosmos, in its December number, takes this up as a sort of personal insult, though we did not mention that journal at all, and bravely claims to be the very quintessence of "independence," from first to last; while it insinuates that an editorial paragraph of our own, which drew attention to "our advertisers," and which we repeat in this issue—"may be the result of influence—may not be inserted in compliment to advertisers—may be paid for directly or indirectly." It points "with satisfaction" —*to itself*— "to the" absence from its pages of unseemly *puffs of special manufactures*, of which the pages of other and *so-called* independent journals are *embellished. We have not*, as those familiar with the Cosmos are aware, *allowed its pages to be prostituted to encomiums or testimonials of its publishers' manufactures, nor those of any other manufacturer or dealer.*" It wonders "why a journal should be more independent if published by a dentist than by a (dental) dealer or a manufacturer." Its remarks are evidently largely influenced by the article, "Plain Words for Dental Manufacturers," in our last number, in which it seems to have found several caps to fit its head.

When we claimed this journal as "the only independent dental journal on the continent," we made no insinuation that the editors of our contemporaries were under the undue influence of the proprietors. We stated a fact and left the reasons of it to be surmised. We did decidedly mean that the Cosmos as well as older and younger journals were not independent, inasmuch as they were used month after month as the vehicle to puff and praise the special interests of their proprietors, being dental manufacturers. No impartial reader of the Cosmos, for instance, will

pretend to say, that the advertising interest of its proprietor is not closely bound up with the part "devoted to the interests of the profession," and that a monthly Journal of 106 pages, *fifty of which are devoted to the loudest advertising of its proprietor* is independent in the true sense of the word. We scarcely think that even the Cosmos will pretend to say that it would have an existence at all, were it not for the monthly monopoly it secures itself of advertising the business interests of its proprietor. Has not the proprietor acknowledged that it does not pay, except indirectly: that its subscriptions have never paid its expenses? Does this show independance or not? Now we mean to say, that a journal independant of any one manufacturer would pay, because every manufacturer could advertise in it and every depot would have an interest in pushing it. As it is now, no other depot will push a journal which is used as a monopoly like the Cosmos. As we said in our last issue, however, the fact that the proprietors use their Journals as advertising mediums and monoplies is no complaint against the proprietors. It pays. They have a right to use their journals and the profession as best they can to promote their business interests. We do not presume to dictate to these gentlemen how they shall conduct journals ostensibly "devoted to the interests of the profession." What we do propose, and wish earnestly to see is a dental journal in the United States, under the wing of no dental manufacturer or College, but independent, *pur et simple*, of any one business interest it can be used to advertise.

We dislike to measure swords with our contemporary on this point, not because it has the advantage of a more frequent issue, but because we are willing to admit, that in making a fortune out of the profession in a short time, its proprietor has honoured it and himself. We do not say that everything he has done through the Cosmos has been from purely selfish business motives, or that he is illiberal, a monopolist, and does not want to live and let live. We do most emphatically say, however, that from its first to its last number, the Cosmos has forced the fact upon its readers in its fifty pages of advertisements, that while one half of it is "devoted to the interests of the profession," the other half is, with the exception of a few other advertisements, devoted *entirely* to the business interest of its proprietor—a dental manufacturer. We dare to believe that if its proprietor could not use the Cosmos "devoted to the interests of the profession" in this way, that Journal would have no existence. We fail to see any liberality in opening its columns to ordinary communications,

and gathering about it a host of correspondents and friends, *every one of whom can become a customer.*

To refer *en passant*, to the claim that the Canada Journal is the only independent dental journal on the continent. In the sense in which we meant it, and as clearly expressed it, this Journal is the only one on the continent not published by a dental manufacturer or college, and used for a special business interest. The American Journal of Dental Science, an old-tried solid friend—is the advertising organ of its publishers, Snowden & Cowman, *Dental Depot*, and of the Baltimore College of Dental Surgery. The Register is the advertising organ of its publishers, Spencer & Crocker, *Dental Depot.* Johnston's Miscellany is the advertising organ of Johnston Bros. *Dental Depot;* the Dental Office and Laboratory of Johnson & Lund, *Dental Depot.* The Dental Advertiser, of the Buffalo *Dental Manufacturing Company;* the Cosmos of S. S. White, *Dental Depot;* while the Missouri Journal is the zealous organ of the Missouri Dental College, and the property of A. M. Leslie & Co., *Dental Depot;* and the St. Louis Quarterly of the Western College of Dental Surgeons. And, as if to add further proof to our statements, the last number of the Missouri Journal announces that its publication is to be resumed by A. M. Leslie & Co., *Dental Depot* and the new venture, the *Dental and Oral Science Magazine*, though the organ of the New York Odontological Society,is issued by R. J. Williams, *Dental Depot.* There is only another left; and it is not our fault if this Canadian Journal is really "the only one on the continent independent" of any such business interest, which boosts up and advertises the others. It is a fact, nevertheless, and "the more's the pity."

The Editor of this Journal is its sole proprietor. He makes no use of it to promote his private interests by sending it to the newspapers for review—a custom common with every medical and law journal in the country. He has no interest of any kind in any Dental Depot, and is just as free to say a good word editorially for the proprietor of the Cosmos and anything good he introduces, as he has often done, as he is free to criticize any humbug or do justice to any rival. The insinuation, that the request to deal with our advertisers *generally*, is a "paid puff" is as silly as it is untrue.

An "independent" Journal, appearing monthly, ought to let its subscribers know the best everywhere; its selections ought to be *cosmical;* the good in other Nazareths ought to be prominently noticed. Of late years the Cosmos has narrowed this rule more than ever. It is a

Cosmos so far as the business interests of its proprietor is concerned, but it is not *Cosmos* in the true interests of the profession. Our own journal never made any pretentions to fill the space lacking. It is doing its best. Its rivals in the United States have greater scope for broader work.

The very fact that the Cosmos is owned and published by a dental manufacturer, who controls not only its advertising space, but who apparently influences its "selections" is proof positive that it cannot be independent. Each number contains 50 pages of advertisements, forty at least of which are exclusively devoted to the most fulsome puffing of the business interests of its proprietor.

An independent journal ought to be free in its advertising columns to every dental manufacturer who has goods to advertise, which he thinks the profession ought to know about. *The Cosmos has rejected the advertisements of several leading rival depots at any price.* It is certaintly independent enough to prevent competitors making known their interests to the profession through its pages.

It is rather amusing at best to read the boast in one breath that our enterprising contemporary has not "prostituted its pages to encomiums or testimonials of its publisher's manufacturers," and then to turn over further to the fifty pages of its advertisements in the very same number, where the first page advertises an article "superior to all others;" the second, a material "the best of its kind," with two "testimonials;" the third, another advertisement puffed with two more "testimonials," the fifth, more "testimonials," and so on, until the flood of "encomiums and testimonials" about a chair manufactured by the proprietor, culminates in a deluge of no less than thirteen "testimonials." And this is the Journal whose pages have never contained "unseemly puffs of special manufacturers" or "allowed its pages to be prostituted to encomiums or testimonials of its publishers manufactures." It is a very convenient arrangement which Janus-like, can devote itself "to the interests of the profession" ostensibly, and to those of its proprietor actually. It is scarcely likely that the profession generally will admit that the two are, one; that the private business of the proprietor are so interwoven with *our interests*, that they must be as coupled and inseparable as the swans of Juno.

In one point of a paragraph we agree. It is so self-evident. "Nor those of any other manufacturer or dealer." The simplicity of this is refreshing.

Has nothing good and even great been brought out by rival depots? Where in the "independent" Cosmos is the profession to find justice done

to the enterprise of Johnston Bros. for first introducing liquefied nitrous oxide to the profession of the United States and Canada? Why was the independent Cosmos so long silent about this valuable introduction? It was used in Europe over two years before it was even noticed in our contemporary. Where is the profession to look in the Cosmos for fair notice of the dental engines, brackets, etc., introduced by other *dealers*—not by private persons—before its proprietor brought copies out? When Johnston Bros. introduced the Dental engine, the Cosmos proprietor cast a slur upon it and called it "the kicking engine." Where does our independent friend do justice to the merits and superiority of Justi's teeth? We know where to look in the Cosmos for "unseemly detraction" of other makers wares: we can point out where the proprietor uses his Journal monthly to depreciate and decry the honest claims of his rivals, and to satiate his readers with sickening puffs of his own manufactures. The March number contains twenty-seven pages of a plea in defence of its infringement of Johnston Bros. patent of liquefied nitrous oxide,—a bold-faced infringement, unblushingly defended, with much personal bullying and abuse. The Cosmos is the very last dental journal which can lay claim to honest independence in the sense in which we clearly expressed it. The profession could not find in the "independant" Cosmos, any allusion to Williams special forms of gold *until they were copied by the Cosmos proprietor*. The same can be said of engines, brackets, the moveable back of an operating chair—all of which the Cosmos proprietor copied from other makers. With the exception of the Electric mallet, he has not introduced one of the late leading improvements. It may be said that the Cosmos could not be expected to advertise other Depots at the expense of the proprietor of the Cosmos. Yes, it should; or at least, an "independant" journal should.

What we want as a profession is an untrammeled Journal; one as independent of the proprietor of the Cosmos as of the proprietor of any other dental depot, or of any college interest. The medical and legal professions have such periodicals. Why not the dental profession? We should be glad to see such a reformation in dental literature across the lines, and urge our brethren *to dare to speak out*. If they prefer to hang by the skirts of any manufacturing monoply the worse for themselves. It is only a duty to themselves to possess Journals perfectly independent, published by no manufacturing or college interest. We are confident it will come in time.

"NEXT"!

The *Dental Register* in its December number also devoted to us two pages and a half of rhetorical thunder, with some common sense thrown in for variety. It is suggestive to us that those editors who claim so loudly to be "independent," are so intensely devoted at the same time to the interests of the proprietors of their Journals, dental manufacturers—that they rush to their defense with a zeal so hot as to make their protests questionable. The Editor of the "Register" asks what we mean, and what we want. He will find his answer in our compliments to the "Cosmos." He admits that the "desire for "independent journalism is heard often and from various quarters; that the wail has become chronic." We thank him for corrorboration of our opinions.

"The Editors have nothing to do with the advertising pages and are in no sense responsible for them." We admit that, though friend Taft goes on further to say "This is true of *some* of our dental journals if not all." But where would the Editors be *under the present system* if not for the boost and backing they get from the manufacturers? when and where in history of dental Journalism in the the United States did an "independent "editor criticize the products of his publisher being a dental manufacturer? The policy of silence as to merits or demerits is just the one we want to break up. And it cannot be broken up as long as our Journals are the property and the advertising mediums of dental manufacturers. No editor would care to praise or dispraise his publisher. No publisher would allow an editor to use his journalistic property to depreciate his manufactures.

The Register flings out sarcasm in lieu of argument, and insinuates that "the flagellation business" is ours. We would be glad too to hang, draw and quarter some people we know. But not the editors of any of our journals, with whom we have no sort of quarrel. They do their honest best, and get little thanks for it, but they labor under a false system, which we would rather see them anxious to change than adhere to.

"NEXT"!

This is getting serious. The Missouri Dental Journal in its December number welcomes us to life again—for which we sincerely thank it,—but doubts if our "digestive organs are yet in a healthy condition," recommends stimulants, and good-naturedly banters us generally. We have digestive organs like an ostrich, but we doubt if even an ostrich could swallow the

sort of dental graduates which prompted our remarks in our last issue on dental education in the United States, and to which article our St. Louis friends allude. "A pretty severe tirade against American dental colleges" is very badly wanted, when products such as those mentioned in our last number are sent out as full fledged D. D. S's. Since writing that article we have learned of other cases quite as bad. A young man left Montreal a few months ago after being with a dentist as a student, for *four months*. He immediately entered a Dental college. and before the session is half over he informs the Dean that he "must do a little work for himself to make both ends meet or leave the college." The worthy Dean, to use the party's own words "gave me an examination and said I might open an office in ——and attend some of the lectures at the same time"! We met our enterprising candidate for a college degree purchasing a chair etc., in a depot.

This same party mentioned the case of an Italian who was unable to speak or understand a word of English, who after attending the Clinics and lectures, *and paying the fees, was handed his Diploma without examination.* An interpreter was used to explain the "concession."

We still maintain that dental college education in the United States is unworthy of the high professional reputation of leading American dentists.

Now in taking sides with the Western college of Dental Surgeons in its new departure to grant its diploma to any one *who can pass* its examinations we saw a real effort to raise the standard of the examinations. It does not follow that its examinations are inferior because it has departed from the orthodox custom of other colleges. The Missouri College friends seem to think with Bishop Warburton that "orthodoxy is my doxy—heterodoxy is another man's doxy." It may follow. as we fully expect it will, that such shining lights as the quack D. D. S. who *after his graduation* thought that saliva was composed of oxygen, water and nitrate of silver, will find that the value of dental education and a dental degree is not what they profess, but what they really know and can really do.

A SERIOUS AND SENSIBLE VIEW.

The *American Journal of Dental Science* reviews our remarks on dental education in a dispassionate and sensible manner, which does credit to the head and heart of its junior editor Dr. Hodgkin. We thank him sincerely for his appreciation of our motives. We cannot state his views better than by using his own words.

"This question of Dental Education, we are glad to see, is making a stir, and no better evidence of progress could be afforded than the signs of dissatisfaction with the existing condition of things. Evidently there is room, vast room, for improvement in the methods of teaching and in the things attempted to be taught. But the question of reforming them is one which presents difficulties only seen by those engaged in the teaching, and it seems almost vain to explain these difficulties to those outside, who are so free in their suggestions as to what is needed.

"To one great difficulty, as it appears to us, in the way of reform in dental education or dental ethics, is a want of unity and organization among the profession. Representing as is does all grades of intellect and all degrees of cultivation, (we speak of the profession as it stands to-day) there seems not the least harmony, or concert of belief or action on their parts. It is dentist arrayed against dentist in practice, and college arrayed against college in teaching, with what should be a generous rivalry perverted into a tradesman-like competition. Colleges which should confer with each other as to a common method of operations, or a mutual understanding as to the grade of studies and of previous acquirements of students, are kept apart by a spirit which seems to be, if it is not, jealousy.

"There is a feature of the case which, while it is humiliating, is worth considering. Supposing, as is most desirable, that a university education were an indispensible pre-requisite to admission to a dental college, as a student; and suppose the course to be at least four years—and this is not only not too long, but hardly long enough to teach a student enough of dentistry to practice profitably to his patients—assuming all this training, will the man who has spent his nine or ten years, with the aims and desires which such training would most likely develop in him,—would such a man be willing to take the place and the pay which nine out of ten of the dentists who now practice are per force compelled to take? For nine out of ten of those now practising dentistry cannot hope, in the districts in which they are obliged to operate, to find either congenial society or adequate pay. There is no demand for advanced men in most localities, either in medicine or dentistry; they would be dissatisfied, cramped and out of place.

"It may seem hazardous to state it, but we feel impelled to the conviction that the average supply to the public of dentists, in point of quality, is equal to the demand. That there are dentists in abundance, as there are M. D's in any quantity, is plain; but the better class of

people who patronize dentists do not intelligently discriminate in favor of those who are competent and educated. This is because they do not appreciate the scientific aspect of dentistry. If the public demand for men of education and scientific attainments was increased, the colleges would not be slow to respond.

"This demand for additional culture does not come from outside the profession,—for the public, who employ the dentists, though complaining of their work, yet seem incapable in the main of making any adequate distinction or discrimination as to the merits of the respective claimants for practice, nor do they indeed as a rule select as the profession themselves would select;—for the dentist, to the dentist is not always the popular operator of the town. The run on a particular office, as is well known, is not due always to the merits of the dentist, and if not fortuitous, is at least not the award of merit.

The pressure,—and it is one of the things that as dentists we should feel proudest of,—comes from within the ranks of the profession. The more cultivated, are the ones who are urging the elevation of the standard of education, and it is they, not the public who urge, entreat, demand reform among those who are by life and act lowering its tone.

"Somewhere in the hazy future we see an endowed institution or possibly more than one, selecting with the nicest care and discrimination students with liberal preliminary training,—such training as would admit them to an English University,—and these students so prepared for an ideal dental curriculum, after at least four years' careful training in the principles and practice of dental surgery, graduated. And further on still, we dream of seeing these Universities taking the place of and swallowing up the dental colleges, which, having filled a useful place in their day, will become things of the past. But these things cannot come to dentistry sooner than for medicine, nor is it more desirable, and how far off indeed does it seem to be for the last-named profession! Still, the tide sets slowly that way, and the good and wise of the profession are unfeignedly glad to see it"

H.

Drifting.—No one can doubt the improvement in the practical standard of the profession in Canada. We were never better supplied with good operators. But is the professional tone being elevated? As we increase in numbers, and grow in knowledge, is there a corresponding pride in making the profession a liberal and cultivated body of gentlemen, whose social and

professional *status* rank with that of any other profession in the land? Is there a more general repudiation of the old low tricks of advertising, the poking of cards into every hole and corner, the personal solicitation of patients, the "cheap Jack" traps and hotel dodges, current among Bowery dentists of New York, but utterly abhorrent to the respectable American dentist?

Competition will drive some good men to great extremes. One man advertises "reduction of *prices* to meet the times", "artificial teeth from 75 cents upwards", and some respectable men take it as a dead weight which is to upset their balance, and draw them down to the same low level. Let the respectable part of the profession treat these quacks—for quacks they make themselves—with the contempt of silence. Competition in vulgarity or dishonesty is the worst kind of competition. This greedy quackery always works its own cure, and those who practice it meet their reward in the loss of the confidence of the public, and the loss of the respect of the profession. A man can steal cash, but he cannot steal a reputation.

Hard Times in Ontario.—Our Ontario friends need not feel disappointed at the lack of matter from Ontario. We have asked for matter from the Upper Province personally and by letter, until importunity is almost exhausted. Do the "hard times" affect the pen, ink and paper there?

Dr. B. W. Day, formerly President of the R. C. D. S. and father of the Dental reform movement in Ontario, after several years residence in Chicago, has returned to his old home in Kingston. As everywhere else in Canada, he finds the population of Dentists has increased, though the supply is more than equal to the demand.

Society Work.—The hard times in Canada have had a depressing effect upon our Associations. We hope our Ontario pioneer will be well to the fore at the next meeting. Quebec intends making another desperate rally. The last three years has been marked by a falling off both in attendance and work. They were good old times in the first years of our Societies. Let us put our shoulders to the wheel again. It is stuck in the mud. "Dental Societies to the dental profession, have almost become as prayer meetings to the churches."

Our Advertisers.--We wish to direct attention to the gentlemen who have favoured us with advertisements. It is only fair reciprocity to ask our subscribers to give them the preference of their patronage. Manufacturers who come to Canada to get everything and to give nothing, are helpful to themselves only. Those who give as well as get are the best friends of Canadian dentists who want a home Journal to succeed.

Sample Copies.—Among the very unreasonable people with whom proprietors of Journals like this are brought into contact the "sample copy" man is *la creme de la creme*. We have had over two hundred requests from the United States for speicmen copies. It would be unjust to those who subscribe regularly, to accede to these requests; and equally unjust to ourselves, as we have no manufacturing or other business interest of our own to advertise. Those who have are justified—no doubt are anxious—to pick up new acquaintances in this way. We are not.

It is very easy for any one over the border wanting a sample copy, to send with their request a sample of United States Currency.

We knew an old miser in Montreal who secured his supply of wines for New-Year's Day, by getting samples from various wholesale and retail grocers. We fancy there are dentists who would like to furnish their libraries on the same principle.

Volume Five.—The next number will complete Vol. 4. Is Vol. 5, to continue a Quarterly or to become a Monthly? We could easily increase our subscription list outside of Canada to secure us against loss; but we want to issue this Journal in the special interests of the Canadian profession. We have hosts of friends over the lines, who always came to the front to help us. But we want to know the wishes of our confreres in Canada. As we said in Vol. 1 we repeat, "We have no personal interest to serve. If our subscribers prefer that the Journal shall be published and printed in Ontario, we will transfer it there. We will be glad to receive hints, hits, grumbles, and other generous advice, and will think none the worse of it, especially if it comes from our subscribers."

BOOK NOTICES.

THE DENTAL AND ORAL SCIENCE MAGAZINE, DEVOTED TO PROFESSIONAL INTERESTS AND THE TRANSACTIONS OF THE NEW YORK ODONTOLOGICAL SOCIETY. *Edited by Jas. E. Dexter. No. 1, Vol. I. February, 1878. Published quarterly, by R. S. Williams, New York. Terms, $2.00 a year, in advance.*

The New York Odontological Society needs no introduction to the profession outside its membership. Its active and serious *work* has been among the most valuable contributions to dental literature, and now that it has an organ of its own where it will *exclusively* publish its transactions, we will get fuller and better reports than heretofore. It is unfortunate that the large bulk of the original communications in our journals meet no such criticism as do papers read before an Association, and undoubtedly the plan proposed by the N. Y. O. S. will be likely to make the matter far more interesting, and be the means of bringing many "originals" under the healthy analysis of the Society's meetings.

The publisher proposes to exclude much of the matter generally published, which, "possessing merely local or temporary value, makes no mark on the permanent record of professional excellence." Evidently it is a great step forward and will command *the leading place* among the journals on this Continent. Though it is published by a dental manufacturer, and therein meets our disapproval, it shows no signs of becoming a large monthly advertistng medium where the subscribers have to pay extra postage and subscription for the benefit of a monopolist.

We recommend it heartily to the profession as the best we have. The New York Odontological Society will through it *increase largely* its usefulness.

THE HOME JOURNAL. WEEKLY, $2.00 a year. Morris, Phillips & Co. 3 Park Place, New York. A high class society paper, unique in its treatment of social questions, giving the latest tit-bits about Art and Artists, Books and Authors, Music and Musicians. Recent fashionable weddings, approaching marriages, private entertainments in New York, Boston, and other American Society, Hotel Notes, Balls, etc etc, in profuse and pleasant print. It has a great field of favor, and gives a wider circle of people every week, peeps into American—and sometimes Canadian Society, than the very large bulk of them can ever hope to get otherwise.

A Dictionary of Medicine and Dental Surgery and the Collateral Sciences. *By Chapin A. Harris, M.D., D.D.S. Fourth edition, carefully Revised and Enlarged, by F. S. Gorgas, M.D., D.D.S., Professor of Dental Surgery in the Baltimore College of Dental Surgery. Philadelphia, Lindsay & Blakiston, 1878. Cloth, $6.50; sheep, $7.50.*

A charm like a romance lingers about the name and memory of Chapin Harris. He was one of the true and noble pioneers of Dental reform, the latchets of whose shoes we would have been proud to unloose. His works were the first love of many a Dental student; and, indeed, many a heart old in error as well as in years, was warmed into new life by the "Principles and Practice of Dental Surgery," which cast Maury, Bell, and most of the authorities of the time into oblivion. What volumes it speaks for Dental progress, that now Harris is only kept up to an authoritive standard by new editions and old friends. Prof. Gorgas, formerly a pupil of Dr. Harris, and now Dean of the College which he founded, labors for love in the revision of the Dictionary, and has given us the work just when it is wanted. It is neither verbose nor too curtailed: it is printed in clear type, on good paper, and put into the good binding for which Lindsay & Blakiston are famed. We have no heart to criticize the few faults, and barely like to tell our readers how it took away our breath when we read that filling teeth is now to be called *Odontoplerosis;* that Lycoperdon, the best possible styptic for alveolar Hæmorrhage is dismissed with the remark, "The Puff Ball, also a genus of fungi." A hundred improvements show themselves; the old prejudice of Harris against Amalgam, and the cry of "poison" he so sincerely, but unscientifically believed, is cast out for common sense and modern knowledge. Altogether the "Dictionary" is a book which every student, as well as those in practice, should own. It is a decided want—a decided improvement upon its predecessors, and a decided credit to editor and publishers.

CORRESPONDENCE.

The Ontario Board Examinations.

Sir,—I have only lately read an attack upon the Dental Board of Ontario, for the severity of its examinations last year, and as the article in question was written by a brother of one of the rejected candidates, and, of course, prompted by the opinions and feelings of the latter, I think it fair to state my opinions also, being also a rejected applicant.

1. I was very nervous during the time—a little sick—I fancy most of us were. At the time I felt very sore, and, of course, thought any questions I was unable to answer were questions that should not have been asked. To make a long story short, I was "plucked," though I had spent one session at a Dental College in the United States, studied hard at home, using the best of materials, etc. Of course I thought of my wife and five youngsters at home, and of the grief it would be to my wife.

2. My conviction now is that I got my deserts, and that I deserved to be "plucked." It does seem to me very hard that such useless questions (to a dentist) should be given on chemistry, but upon the anatomy of the head—my hardest difficulty to overcome—etc., I think it very right that a student should be well grounded.

3. The result to me has been that I have gained twelve months more good knowledge, which will last me my life; makes me enjoy conversation or reading on professional subjects: increases my respect for the profession and for the Ontario Board, who are being abused, but who are doing a great work to elevate Dentistry and to make it worthy of the name of a profession.

Whether I will really appear again I do not know, but this I say, to me personally, my rejection has stirred me to deeper study. I have made ten times the progress I would have made had I been passed, and have more confidence in my own skill. I confess I felt it hard and having spent a great deal of money, and being oppressed with difficulties, wish I had my license, but I am fixed in my resolve to succeed, and have been made by my rejection a better student and practical Dentist.

Having attended College in the United Sates I can testify that there many young men are taught to run before they are taught to creep—that is, they are taught to fill teeth and operate generally, as the first thing, and no ambition created to enforce theory. The Ontario examination begins at the right end.

Yours, &c.,

A Rejected One.

Memo.—We are obliged to hold over two promised contributions for the next number. We give our subscribers *eight pages* more in this number than we agreed to.

CANADA

Journal of Dental Science.

VOL. IV.—AUGUST, 1879.—No. 4.

ORIGINAL COMMUNICATIONS.

DENTISTS AS MEN OF BUSINESS—No. 2.

BY AN OLD DENTIST.

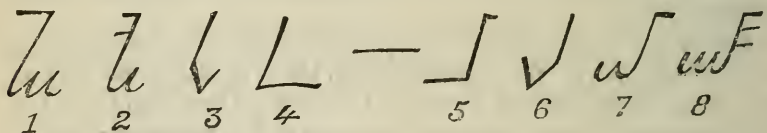
I propose in this paper to say something about the matter of recording the operations of the day, and of generally keeping track of what we do professionally.

I believe it is a practice with nearly all Dentists in the country and a few in the city not to make appointments, but to attend to patients as they come, "first come first served." Of course no first-class Dentist in cities can do this except in special cases, and so it is unnecessary to say anything to them. But from many years experience of the practice of country confreres, I am convinced that one of the principal reasons why their patients come into cities for dental services, is that they may be obliged to drive a long distance at home to their Dentist to find him pre-occupied, or so hurried that if he attends to them at all, he must do it in an unsatisfactory manner. I have been often told in my city office, that it takes less time to come to the city and run the chance of getting some Dentist to put off a city appointment, than to visit the country practitioner at home. Now it seems clear to prove that if country Dentists encourage their patients to make appointments by post or telegram, or otherwise it would be more satisfactory to all concerned. That country patients would be better attended to at home, providing the Dentist is qualified I feel sure, because not only has the country practi-

tioner more leisure, but he is at hand in the event of pain consequent upon operations, or of misfits, or alterations in artificial dentistry. Therefore I think it would promote the success of such Dentists to develop the practice of making appointments several days in advance.

Where a patient has a great deal to do in the way of filling, I find it a good plan to make appointments several days in succession, and thus complete in one week what is commonly extended over several.

"Can we charge for broken appointments?" I once did. I got my fee but lost my patient. I keep a very small ivory book in my vest pocket in which I enter charges, accounts paid, etc., when my regular appointment book is not handy. Before I used this I found I forgot to enter many items, as my appointment book is like an old lady's spectacles, likely to be found in one room as well as another. I enter everything I do in business, as well as all cash received each day, and accounts paid in my appointment book as soon as I finish my patient, or receive money. If I simply extract a tooth and receive the miserable pittance of fifty cents which has ruled us for over fifty years, I mark in a right-hand corner 50c. paid. Whatever I do in operating I mark down at once, opposite patients name, and use the following symbols instead of the troublesome register; for which I am indebted



to Dr. Oliver Martin, of Ottawa.

The molars are represented by three cusps, as in No. 1 and 8. The Bicuspids by two cusps as in 2 and 7. The cuspids as in 3 and 6, the laterals and centrals, as in 4 and 5. No. 1, is shown to be the first molar of the left side by the single dash to the left; No. 2, is shown to be the second bicuspid of the same side by two dashes: In fact the particular molars and bicuspids are represented by dashes to right or left according to their position in the mouth. The laterals are represented as in No. 5 with a dash. The centrals, as in No. 4 without any dash. The above diagram represents the teeth of the upper jaw. The lower are indicated by simply turning the figures upside down. Now supposing I insert a contour filling in No. 4 for instance. Not only can I mark the place, but the exact outer shape; and so if a filling is inserted in a

bicuspid crown or elsewhere, I can make the situation as exactly as by any other register.

My appointment book, for instance, has John Jones at 9 o'clock a.m. I fill the left lateral incisor on the left proximal side with gold. I mark it thus.

9 John Jones, $\frac{7}{}$ / (g) $3.

and so on. If I extract that tooth I mark down the symbol merely, adding "Ext." What's more simple and trustworthy? Until I adopted this plan I could never be bothered with registration.

I like the plan in rendering accounts, of merely stating "For professional services from January until June" though I find that it will require many years to naturalize it among our patients. They expect detailed accounts, yet they do not get them from their physicians. And yet, they may reply, that they get them, attested too by the prothonotary from their lawyers.

The system of demanding cash or part cash in advance ought to be an elastic rule, for otherwise it savors of charlatanism. Artificial dentistry at least, ought to be cash, and all accounts should be rendered a day or two after the operations are completed, if not to be paid, at least to be then and there found fault with if one is disposed to do so. Professional men lose a great deal by laxity in keeping their books and prompt collection. It is bad too, to run up large accounts.

I enter from my appointment book into a day book, entering every night, my assistant entering into a ledger. When accounts rendered are paid me in the office, I use the blank Sundays in my appointment book to record dates, names and amounts. I'm sorry to say that I have very many Sundays which have remained blank.

"DENTAL ENGINES"

BY HERMAN E. HEYDE, BRANTFORD, ONT.

In answer to a communication in the Journal of March, upon the sub-

ject of "Dental Engines," I thought the author judged not only the instrument, but more particularly his profession too harshly. On this account,I felt as though it were my duty, and pleasure, although not a grey-headed sire, to make a few words of objection, since I am such an ardent admirer, as well as vindicator, of the crowning benefits, derived from its proper use, not only to the operator, but to the patient as well, which is I assure you, a matter of great consideration.

We must admit, as he proclaims, "that dentists are human beings", and equally tempted to unfair dealing, as other professional men, and no doubt have more favorable opportunities; since the public are so little educated in matters appertaining to good dentistry; and indeed, even were they it would still be impossible for them to know, whether the cavities were properly cleansed, and excavated, providing the external appearance of the operation was satisfactory. And it seems to me, it was equally convenient, and the same incentive, which prompts the dentist to be now unjust, must have, and did cause him to be correspondingly so, in times past, when he was *minus* the engine. "Of the division of dentists into three classes, those of honor and moral standing. those of would-be honor but far sooner ease and comfort, and those similiar to which, we find in all callings and stages of life, men who are ever willing, to condescend to do something of a dishonorable character," is appropriate; and always shall be, not only to the dental profession, but to the medical, to the legal, and to all other classes of workmen, whether they be in possession of scientific appliances, or not. Now if the first class use the engine, they can accomplish their desired object better. For by its assistance, and more particuliarly in those very large difficult posterior proximal cavities, wherein, its use proves not only so successful, but convenient, and to be now an absolute necessity, (yes with all the possible emphasis) in obtaining that nice smooth dove tail cut, which is always to be desired, and without producing that unnecessary labor, pain, and fatigue to both patient, and operator, thereby enabling the latter to discharge the different stages of the operation, with more interest, more ease, yes, and more pleasure; three conditions, which are not only favorable, but necessary for the proper accomplishment of a successful filling. The members of the second class are most of all benefitted, and through their influence, as a matter of course, thousands of sufferers obtain relief, since, he now a man of ease, has in his possession a device, by which he is assisted in obtaining his desire, without necessitating, that amount of arduous labor, which his avocation

called for, previous to the acceptance of this useful, and most adaptable appliance. More especially, since our premises admitted, that he was gifted with the requisite honor, while the third class, I contend are thankfully, far in the minority, instead of as our writer claimed the majority. Be they few or many, are but little influenced by dental engines, or any other instrument, since their crowning desire, seems to be, *to obtain* the greatest amount of cash, for the least amount of labor. And finally, since I have shown, that the two better classes of dentists are benefitted, and find the employment of the dental engine advantageous, and embracing, as they do three fourths of the profession, it must necessarily follow, that the community at large are also more satisfactorilly cared for, since, that which influences the fountain head, must affect the stream, not only in its general course, but throughout its many little ripplings. Of course far be it from me to say three fourths of the operations, which are now performed are successful, nor never were they, either in times past, or at the present; but I do most emphatically deny, that the engine has spread, and promoted failures, *which would not otherwise have taken place*, but owing to incompetent dentists, unprofessional and unskillful work has been executed, irrespective of dangerous instruments. As to the dentistry of to-day, I think it is far superior, to that which has been performed at any time previous. But living as we are, in such an enlightened age, where skill, and manipulative power have gained their way supreme, and have exercised their potent influences we are enabled to judge art in all its branches with an educated eye, which dentists had not so keenly cultivated in the past days, and thereby causing us to speak disparagingly of a fair filling, which fifty years ago would have been considered even excellent; and too, dentistry has now been elevated, to the rank of an honorable, and respectable profession, instead of being considered, and classed as it was, among the ordinary works of a mechanic. Again we admit our profession has since its very infancy, had men of honor, and talent, who would not for a moment be guilty of, or cherish any thoughts relative to a disreputable act, and who executed work, which was always, and ever will be a credit to them, and standing even on an equality with that which is performed now, assisted as it is with all the modern contrivances. But yet, let us fairly ask the question, how many of these brilliant lights, had we shining in those days? and we must in all candour, answer that they were both few, and far between, while to-day we have many dentists both in our own Dominion, and the neighbouring Republic,

as well as elsewhere, who have gained for themselves both fame, and reputation, and many of whom are but young men in their profession, but gifted as they are, with those necessary natural abilities, and that keen eye of perception, together with that aspiring diligence, and unsatiable ambition.

Since "the removal of the enamel is accomplished in two ways'', as our writer stated, and that he failed to see, wherein the instrument can speed the preparation of ninety per cent of the cavities presented to the dentist, I may say, that it matters not, whether there are, but two, or six modes the dental engine has proved to my entire satisfaction to be a source of unspeakable assistance in the quick, and ready preparation of simple, not to say difficult cavities such as I alluded to previously, and of course by using such drills as are applicable to each particular case, we shall attain more satisfactory results, and produce less pain, than by the old tediou hand boring process. No doubt the friction produced by the instrument, engenders heat, which naturally gives pain to sensitive, and newly exposed dentine, but when I reach this stage, I usually stop, as I find it necessary to examine my cavity, for often I learned that that portion of the tooth had been freed from its diseased connections, but I now ask you advocates of hand burs, have you not also experienced these same results? I have also failed to see in any tooth, which I ever filled when the nerve died after the insertion of the plug, that it was owing to heat produced in drilling my retaining points in such close proximity to the pulp, but usually, and in fact invariably found that pressure was exercised upon it, as well as not being sufficiently capped and protected from the deleterious influences of heat and cold which it was afterwards subjected to. I must also say, both with the use of the engine, and by hand drilling, I unconsciously have been deceived by the extended surface occupied by the pulp cavity, and have drilled into it, and thereby inflicted injuries, which resulted in the death of the pulp. Also, when my own patients, as well as patients from other dental offices, visited me on account of poorly filled, ulcerated, and aching teeth, never did I deem it necessary, to enquire, "whether that whirling machine had been used or not," as I invariably found other much more prominent, acceptable, and far more satisfactory reasons, relative to their difficulty; as for example, the anterior teeth were dark, and discolored, and appearing, as though they had been perfectly filled, while in their palatine surfaces, they usually unravelled the mystery, for in nine cases out of ten, I found

them only half filled, while the other half, or third was filled with food, or other extraneous matter. I think there are about five, or perhaps ten per cent of the cavities, which come under the dentists observation, which are and always can be prepared most satisfactorily by the excavator, while I most sincerely believe, that the remaining ninety per cent, are more or less assisted by the use of the engine, so that I feel, as though, it should be prized, and no doubt it is, as being the most valuable instrument yet brought before the profession.

Finally, "should it be placed in schools of dentistry?" I answer most certainly, yes, and there teach the student its proper use, its advantages, its, disadvantages, and endeavour to inculcate principles of honor into him by which his future life shall be guided, so that he may be enabled to command the confidence, as well as, the esteem of his fellow citizens, and also cause him to exercise, and direct his manipulative faculties, to the formation of a good, and well shaped cavity, and the introduction of a sound and solid filling. And if he finds it "together with all its paraphernalia,"as no doubt he shall,a source of great assistance in the "work shop" where our writer deemed it most advisable to place it, use it, and even then put forth an effort to mould, to fashion, and to frame his thinking, and perhaps inventive faculties, so that he may in after life prove to be a blessing to mankind, as well as, a noble, and shining light to his profession.

PREPARATION OF THE MOUTH FOR ARTIFICIAL DENTURES.

BY JOHN LAUDER, L.D.S., D.D.S., MONTREAL.

It cannot be denied but that a large proportion of artificial dentures are not worn with perfect comfort. A good many are merely tolerated, and a fair proportion not used at all, but thrown aside as uncomfortable.

I propose in this paper to examine some of the causes which lead to misfits, and some of the precautions to be taken preparatory to their insertion.

1. PARTIAL SETS,

Demand more care and skill than full dentures, sufficient attention is not paid to the complete absorption of the gums and alveolus, and the remo-

val of salivary calculus in standing teeth. It is necessary to remove all tartar from the necks of the teeth ; but to secure a particularly good fit, where the tartar has accumulated to such an extent as to intrude upon and inflame the gums, I would remove it *some days before taking the impression*; because if the impression is taken at the same sitting, sufficient time is not given for the subsidence of inflammation and the change which is sure to follow, and which is quite sure when it occurs after the set is inserted to alter the nice adaptation of the plate at the margins of the gums. In fact, where the gums are swollen in any case about the necks of the teeth, either from simple inflammation, the discharge of purulent secretion, etc., a few drops of equal parts of Fleming's Aconite, and Liniment of Iodine should be painted on the gums before taking the impression.

Care must be taken not to leave in loose teeth which would destroy any good fit in course of time. It may at times be allowable and perhaps preferable to leave a healthy root. No rule but the judgment of the Dentist can dictate. Of course any cavities in standing teeth should be filled and the patient instructed to use the most absolute cleanliness when wearing the set.

One very sound reason why a root should occasionally be left, is that after its removal the adjacent teeth change their position if the plate is not constantly worn : and if the plate should be left out for any length of time by reasons of illness or otherwise, even the articulation of these teeth with their lower antagonists is in a measure destroyed. A root may be often an invaluable retainer, healthy roots are no more liable to become diseased than before the crown was destroyed—that is, if the pulp was dead. If left in they should be dressed down with the corundum wheel on the engine as for pivot teeth.

It is a custom in preparing for upper sets, where all the other teeth have to be removed, to sacrifice the cuspids in almost every case, even though they should be sound. Nature has implanted these teeth like the pillars of an arch to preserve the contour of the face. The length and the prominence of their roots show that they are specially adapted to preserve the shape of the face. I prefer to save them whenever possible, because they preserve this contour, and prevent the ugly falling of the face under the nostrils, where no artificial substitute ever can extend high enough to remedy the defect. Blocks of four can be obtained or carved to be fitted neatly in one section to the space between the cuspids. Of course it is

supposed that these teeth are really worth preservation, and are of good enough structure to justify their retention. I have very often found this to be the case, and I may here say, that a set skillfully made in this way is worth a larger fee than the ordinary full upper set.

FULL SETS. UPPER OR LOWER.

As a general thing the roots should be entirely removed when a single full set is to be inserted on atmospheric pressure. There may be circumstances in old people where springs could be used, and the healthy roots left. In the older countries of Europe, roots seem to last better than here, and the pulp cavities are often opened, filled with gold, and may remain for many years; but a perfect fitting set cannot be thus made, as nature effects the ultimate dislodgment of the roots, and as they are ejected they cause the plate to loosen.

There may be special reasons, such as ill-health—when all healthy roots should be retained. Ordinary cases are treated in an ordinary way: but take mouths where there is a great protusion and excess of the alveolus with a short lip. No matter how thoroughly the mouth heals it is not probable that the absorption will be sufficient to allow of the insertion of *gum teeth* at any time. There may be cases where the alveolus has absorbed so little at the upper part *under the nostrils* that the lip does not recede at this point, and plain teeth may be used; but the larger proportion turn out quite the reverse, and while the bone changes but little at the lower front, a deep absorption results just where it is most noticed, and just where no substitute can be applied on account of the shortness of the lip, which would expose any vulcanite placed over front teeth. To forestall this difficulty in such a case I would prefer after the extraction of the teeth, to cut down the alveolus with alveolar or excising forceps, from the second bicuspid on both sides towards the front: dissecting the gum if necessary, and cutting both inner and outer plates as well as removing the transverse processes and adjacent sockets. The result must be that the absorption is greater, and the mouth a better shape eventually than if all the sockets, &c., were left to the slow and natural process of change.

Another alternative may be resorted to in some cases. If the roots of the ten teeth can be preserved in a healthy condition by excision and dressing down, and plugged: and then plain teeth adapted over these, with gum molar blocks or wings behind, the difficulty may be overcome.

The *dentiæ sapientiæ* ought to be extracted invariably, they are no sort

of use in any case, and ninety times out of a hundred if left, only involve the loss of suction and the renewal of the set at some future time.

The question of retaining roots has provoked a good deal of discussion in England. It is held there that by their removal you destroy the shape of the face, as well as the alveolar ridge. As I said in a previous part of this paper, there may be special cases where the retention of healthy roots is desirable and even preferable : but it seems a fact that roots do not remain as healthy in America, as in Europe, and that we cannot follow the practice here as indiscriminately ; and even those who advocate in Europe their retention, admit in many cases that any artificial substitute can only be temporary, placed over roots: that the time must come when they will cause trouble, and that their extraction has at last to be resorted to. Yet there are more serious arguments against their retention. If patients have to wear artificial teeth at all, the earlier they become accustomed to the greater bulk of gum teeth and vulcanite, the better will the plate be worn. Besides a plate worn over roots has no lasting comfort. It is also always exposed to fracture over the roots as the roots elongate. Another objection may be offered, viz., that neuralgic pains in the head, nausea, and bad breath are frequently present when roots are retained. Obscure pains in the head may be often traced to this cause.

After extraction where roots have been ulcerated and pus has discharged, the patient should be instructed to rinse the mouth thoroughly several times a day with water as hot as it can be borne, and indeed the hot water after extraction, used frequently, is one of the most useful applications to reduce inflammation and tenderness.

After a couple of days of this treatment I would recommend an astringent wash of Pyrethrum Root.

Where the patient has been chloroformed, I recommend a Turkish Bath, as tending to cleanse the system of its influence.

THE NEW DEPARTURE.

BY C. H. WELLS, L.D.S., COWANSVILLE, QUE.

Would you permit me space in your Journal to refer to the merits of gutta-percha and silex compounds as temporary filling, having rea l

several articles entitled the "New" departure, it strikes me that it is merely the revival of an "old" one, but it may be none the less valuable. My experience with this material although partially accidental has been very favorable within the last three weeks. I have examined sixteen of these "temporary" fillings, which have stood intact from six to thirteen years and are to-day in as good condition as the time they were inserted. One particular case is that of Mr. C. S. Boright, of Sweetsburg. Thirteen years ago he came to have several teeth filled, among the rest was a left second superior molar, with a cavity in the crown, which was in so bad a condition that I was doubtful of being able to save it. It was a mere shell; so frail that it would have been impossible to fill it well with gold. The pulp was inflamed, I amputated a part of the latter; wiped out the cavity with carbolic acid, and capped with oxychloride of zinc and filled with a gutta-percha preparation. The patient was asked to return within six weeks if all was well. He would not, however have it touched; and I recently examined it and found it as good as the day it was inserted except that it was worn a little in the centre. *The walls of the cavity are covered to their very edge as hermetically as when the filling was inserted.*

I find that the gutta-percha and silex filling answers beautifully in the incisors, where the dentine is decayed to such an extent as to leave the enamel so thin that nothing but a plastic filling can be well inserted. I prefer to restore the contour with this filling than with gold. I would do for my patient what I would like to have done for myself or my child in a like case: that I would prefer to insert this filling and renew it if even necessary, rather than have an ugly gold one showing. I use a piece of white paper in some cases between the enamel and the filling, but generally the filling alone.

There is also another class of cavities in which I consider this filling unexcelled: those peculiarly chalky white teeth with frail structure, extremely sensitive and in the mouths of people of delicate constitutions—those high-strung nervous people, whom you can scarcely approach. There is no affectation about them either; they cannot help their nervousness and sensibility. Now it is far better to use the gutta-percha and silex filling here than metal; even if it is temporary. But if Dr. Flagg finds it a *permanent* filling, or thinks it is so because it has stood thirty years in his experience, I am more disposed to think him honest than careless, and that others who doubt it have not been as careful as the Dr. in their manipulations.

CORRESPONDENCE.

"AMERICAN DIPLOMAS IN CANADA."

My attention has just been drawn to an article under the above caption in the "Missouri Dental Journal," which is professedly based on statements made in an editorial article in the "Evening Recorder" (Brockville,) of 15th March last.

When the proprietors of the "Missouri Journal" are as well acquainted with the utter unreliability of the statements of the "Recorder," on matters Dental, as are the Dental profession in this Province, they will doubtless accept them with something more than the proverbial "grain of salt."

For both, the ability, and the disposition, to "misstate" and "misrepresent," the Editor of the "Recorder" is certainly entitled to front rank among the members of the "fourth estate" in this country, and the article in question, which is before me as I write, is one of his happiest efforts in that direction.

As the writer in the "Missouri Journal" has written under an evident misapprehension, he will doubtless be pleased to learn the facts which are briefly as follows :—

1st. There are now eighteen Graduates of American Dental Colleges, members of the Royal College of Dental Surgeons of Ontario. Of these twelve passed the examination here subsequent to graduation, and five were Licentiates when they received the American Degree.

2nd. No Graduate of any American College has applied for examination who was not born and educated here, and had studied Dentistry in Ontario, under the Law and regulations then in force.

3rd. No Graduate of an American Dental College has applied for examination before our Board, but has received our degree of L. D. S. and with it the legal right to practice Dentistry in this Province.

It is true, that three of them failed on their first attempt, but after another year's careful study succeeded, one of them receiving the silver medal at last examination.

4th. No Graduate of any American College has ever been refused admission to our examination, nor has any been subjected to any examination otherwise than in common with our students.

In view of these facts, the alleged "dissatisfaction of the American Colleges" can scarcely be considered as based on any sufficient foundation.

If it is urged that we should not subject their graduates to an examination, we reply that we know of no respectable American College which is sufficiently reckless to grant its Diploma to an individual, without examination, simply on his producing a Diploma from some other Institution. And quite right they are. And quite right we think, are the Directors of our College when they pursue a similar course. In fact, our College is the more liberal, for under certain conditions the Candidates are admitted to an examination without attendance on Lectures, while they, the American Colleges, all profess to require attendance during at least one term.

Nor are we less liberal than our American brethren in other respects. In no State so far as we have been able to ascertain, where there exists laws controlling the practice of Dentistry, can a Canadian practitioner, unless a graduate of an American College, legally enter upon practice without first going before the properly appointed Board, and demonstrating by examination his qualification.

Nor is the "Act" proposed by the New York State Society, a copy of which is now before me, much more liberal, notwithstanding some pretty "tall talking" on the subject of our illiberality by some of our Western New York friends. Let it be distinctly understood that we do not complain of this. On the contrary, we think it eminently proper that every country should fix its own standard of professional qualifications. What we do complain of, however, is that we are accused of illiberality for exacting precisely the same conditions as are required of us by our would-be mentors.

But it has been further objected that the terms of our "Act" excludes all but "British subjects," while the charge of exclusiveness does not come with a very good grace from a people whose commercial policy towards Canada, has, for many years, been exclusive to the very verge of prohibition. The most effective reply to such a charge is the fact, that the Ontario Board has not only examined, but admitted to membership and to practice, those who were not "British Subjects" but who were "American citizens to the manor born," and they will doubtless do so again when the opportunity occurs.

It is much to be regretted, that the cordiality and good feeling existing between the members of the Dental profession on either side of the line, should be endangered by the unintentional misrepresentation of the position and action of the Board of Directors of the Royal College of

Dental Surgeons of Ontario, by some American Dental Journals. May we hope they will take the same pains to correct them.

Our Annual Announcement is usually issued about the first of August. Any of our professional friends across the border, who are really desirous of obtaining correct information as to Dental matters in Ontario, will I am sure, be cheerfully supplied with a copy on application to Dr. J. B. Willmott, Secretary of the Board, Toronto.

Apologizing for the length of this communication permit me to subscribe myself a

CANADIAN.

"THE NEW DEPARTURE" IN FILLING TEETH.

In our last issue we published a report of "the New Departure" proceedings in the Odontological Society; and have pleasure in giving space to the following letter from Dr. Flagg.

106 N. 11th Street, Philadelphia,
April 13th, 1878.

MY DEAR SIR,

Accompanying this I send you a copy of the "Stenographic report" of my New York effort for the establishment of some new "Basal Principles" for practice.

Before publishing, the report has been much *shortened*, as considerable material was of a purely *personal nature* between the gentlemen of the Odontological and myself, but the rest (all that is of general interest) is published just as it was spoken, and therefore the expressions of opinion are in no wise altered.

If you will do me the favor to peruse it, you will see that many things your March correspondent makes me say, are naturally very much more what *he thought* I said than what I *did* say! I *desired* that a short-hand reporter should be present. I thank you however, for having published even that which you had, for it will keep the ball rolling.

It was at Prof. Townsend's suggestion that I commenced the systematic investigation as to the merits and *demerits* of amalgam, but I did not say that it was at his suggestion that I introduced my "trial fillings." That was merely *my way* of beginning the work.

When I was, incidentally, upon "conduction" as a quality liable to increase electrical action, I said that, "for non-conduction in our practice gutta-percha was A 1. Amalgam 2, and Tin 3 of our *reliable* filling materials," this *excluded* from this list, the "Zinc Plastics" which though lower in conductivity than amalgam are not *yet* (any of them) reliable fillings, and the *zinc chlorides* eminently unreliable, though eminently useful.

Article VI. "I have never removed, &c., &c. "That is my record!" is to say the least a very funny record for so *careful* a man as I! don't you think so? I really think you will find *my* Article VI. a much more satisfactory "report," and *hope* you may regard it as well worthy *much thought*—I certainly have given a great deal to it.

When I am made to say that "a poor gutta-percha filling is better than a good gold one!" I can only hope that my past record will shield me, but when I make the *peculiarly qualifying* condition "*in its proper place*," and only require the *proper place* to pertain to the gutta-percha, then I think I have a position as strong as the other would be ridiculous. But so it goes, I think it will come out "all right" as you good Canadians say.

I sympathize with you in many of your views. I know as fully as you do, the hindrance which our Journals, as conducted, are to the progress of our profession. I know the farce of *years of study instead of thorough examinations*, and I am openly and strongly upon the side of "eligibility for graduation," being "ability to stand respectably under a *thorough impartial* and *fair* examination, fair to the candidate, fair to the public, and fair to our profession—*That's what we want.*

With kind regards, I remain truly yours.

J. FOSTER FLAGG.

PROCEEDINGS OF DENTAL SOCIETIES.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

MEETINGS OF LICENTIATES AND OF THE DENTAL SOCIETY.

The Meeting of licentiates took place for the purpose of electing a Board of seven Directors for the ensuing two years, and was held at the

Canadian Institute, commencing at two o'clock in the afternoon. There was a numerous attendance of members of the profession, and considerable interest appeared to be manifested in the proceedings.

Dr. Chittenden, President of the Board, was appointed chairman, and also to act as returning officer. It was decided that the vote be by ballot, and that a majority of the votes cast be required to secure an election.

Mr. Harvey moved, seconded by Mr. Bowes, "That before proceeding with the election, the Secretary be requested to report the proceedings of the Board during the past two years." Carried.

Mr. J. B. Willmott read the report of the Directors for the two years ending July 16th, 1878, as follows :—

Immediately after the election on July 17th, 1876, the Directors elect met and organized by electing officers as follows :—President, C. S. Chittenden ; Secretary, J. B. Willmott ; Treasurer, H. T. Wood ; Registrar, C. P. Lennox ; C. W. R. Biggar was appointed Solicitor. In addition to the ordinary routine business several very important matters have engaged the attention of the Board. The first of these was the complete organization of the School of Dentistry and the revision of the curriculum prescribed for students. The first was attained by the passage of By-law No. 15, as published in the announcement for 1876-7. The latter involved serious consideration, and resulted in amending By-law No. 7, so as to shorten the term of pupilage to two years and to require of all students attendance on two full courses of lectures in the school established by the Board. At the first meeting an effort to enforce the provisions of the Dental Act was made by appointing Wm. Smith, detective, as prosecutor on behalf of the Directors. During the two years since elapsed he has successfully carried through a number of prosecutions for violation of provisions of the Act respecting dentistry. In December of 1876, the Solicitor of the Board drew attention to the fact that the statutes of Ontario were then being consolidated, and if there had been found any defects of detail in the working of our Act which required amending, such amendments could be secured much more readily at that time than at any future time. After consultation with the President, a special meeting of the Board was called, and the solicitor instructed to embody in a draft the amendments with which you are doubtless now familiar. The matter was then entrusted to the Solicitor and the Secretary, and all that we asked, with trifling and unimportant exceptions, was granted by the Legislature. We have now, we believe, the best Dental Act in the world, and one which can be very easily enforced. Those provisions providing for an examination fo a degree, which shall be wholly a degree of merit, we hope to see taken advantage of by all the progressive members of the College, a by-law having been passed to give effect to the section. A good deal of feeling having been manifested by our American friends because they were opposed to be precluded from practice in Ontario, not being British subjects, the opinion of our Solicitor has been taken as to whether they could be admitted to examination. That opinion is to the effect that though none but British subjects who have complied with the requirements of the law could demand examination, there is nothing to prevent the Board from specifying conditions on which other than British subjects might be admitted. The Directors being of opinion that the

nterests of the profession would be advanced by identifying it with the American Dental Association—an organization composed of delegates from the American Dental Colleges. State, District, and other Dental Societies, have resolved to send a delegate to the meeting to be held at Niagara Falls, on August 6th, 1878, and have named the President, Dr. Chittenden, to represent the College at that meeting. During our term seventeen persons have applied for license without examination under the provisions of the Act ; those have been granted, and so far as we are aware none of this class are now unlicensed. A subject which has from time to time given trouble again came up during last winter. There were in practice at the time our Act was passed a good many persons who had not been practising five years, and so could not take advantage of that clause. Many of these came forward during 1869-70, and passed the almost formal examination then demanded. A number have read up and successfully passed the more severe examination of later years. From some cause there were several who had not complied with the Act. The visits of the prosecutor to these parties waked them up to the fact that something must be done. Some left the country. One took another course, and petitioned the Legislature to amend the Act so as to respect the rights of those who were in practice in March, 1868. The Draft Act was prepared and ready for introduction when the Board sought an interview with the member having it in charge, and after long consultation the Act was withdrawn on consideration that three individuals, all known to the Board, who had any rights in the premises, were to be subjected to such an examination as would have been required in 1869. This was done and license granted—thus disposing, we hope, of all claims in respect of vested rights, no other cases being known to the Board. Forty-nine applications for examination have been received, and 33 have been passed, 18 having failed. In all, during the two years 53 licenses have been granted. In the ten years since 1868, 153 students have been articled ; of these about 23 have left the profession or the country, so that the average addition will not exceed 13. During the year just closed 14 have been articled. Allowing for deaths and removals from the country the actual increase will not exceed 11 per annum. As will have been observed from the announcement for last year the Board have offered for competition among the students a gold and silver medal. Hoping for much good from the stimulus to study and application, these medals have again been offered for competition at the next examination. With a view of getting the best return for the moneys on hand in December, 1876, $700 was invested on mortgage at nine per cent. Owing to the expense attending the loan and difficulty of obtaining fiast-class security the balance of funds on hand have been placed in the savings department of the Bank of Toronto at five per cent. half-yearly. Commencing our term with a balance to our credit of $1,096.44, we have increased it during the two years to $2,210.23, notwithstanding several exceptional expenses incurred during that time. At the meeting in March last, a Committee was appointed by the Board to report on the advisability of changing our by-law on matriculation. After throughly examining into the matter, they reported in favour of adopting the third-class teachers' certificate ensuing two years, with a view to the adoption at that time of the High School intermediate certificrte as the standard of matriculation. This report has been received by the Board and laid over for the consideration of their successors.

J. B. Willmott. Secretary.

The report was adopted.

The Treasurer of the Board reported that the receipts for the two years including the balance on hand, was $4,287; the expenditure was $2,777, leaving a cash balance on hand of $1,510, besides a mortgage bond of $700.. The report was adopted.

The election of a Board of seven Directors was then proceeded with, the candidates being: Messrs. C. S. Chittenden, L. Teskey, J. G. Sinclair, F. G. Callender, W. O. Guthrie, J. B. Willmott, T. Rowe, D. V. Beacock, L. Clements, H. T. Wood, H. H. Nelles, T. J. Jones, C. P. Lennox, A. McKinney, N. Pearson, R. J. Husband, C. H. Bosanko, M. E. Snider, and R. G. Trotter.

Messrs. Bowes, Harvey and Fisher, were appointed to act as scrutineers and a vote was taken. The scrutineers reported that the ballot resulted in the election of Messrs. Chittenden, Teskey, Willmott and Wood. A second ballot was taken for the election of three others, the result being the choice of Messrs. Lennox, Clements and Rowe.

The Chairman accordingly announced that these seven gentlemen were duly elected as a Board for the ensuing two years.

The meeting adjourned.

Immediately afterwards the tenth Annual Meeting of the Ontario Dental Society was commenced, the President, Mr. C. H. Bosanko, in the chair.

The President, in a few remarks, congratulated the Society on the large gathering of members, and expressed the hope that the proceedings would result with benefit to all.

The minutes of the last Annual Meeting were read and confirmed.

The following licentiates were elected members of the Society:—Messrs. G. H. McMichael, London; A. Lough, Millbrook; W. R. Nobbs, Selkirk; F. B. Coulter, Strathroy; D. Watson, Brussels; C. D. Workman, Glenvale.

The election of officers for the ensuing year then took place, the result being as follows:—President, T. J. Jones, St. Catherines; Vice-President, W. C. Guthrie, Toronto; Secretary, J. G. Sinclair, Hamilton; Treasurer, M. A. Snider, Toronto, (re-elected). The officers elect having been introduced, thanked the Society for the honour conferred upon them.

The Business Committee reported the arrangements which they had made for conducting the meeting, and the report was adopted. Messrs. Guthrie, Harvey and Fisher, were appointed members of this Committee for the ensuing year, and it was decided that they also form the Finance Committee.

The Society rose till eight o'clock.

The Society re-assembled at eight o'clock, when the President elect, Mr. Jones, was introduced and took his seat.

Dr. Willmott said that in order to induce students to strive for higher attainments than merely those required to pass, the Dental College had offered a gold and a silver medal, to be awarded to the two highest candidates at the examination for diplomas. This examination took place in March, and the presentation of the medals was to be made that night. He had much pleasure in announcing that Dr. J. George Hodgins, Deputy Minister of Education, was present, and would take part in the presentation. Mr. Willmott then related briefly the history of the Society and the College. When the Society was organized ten years ago there was no law regarding the practice of dentistry, and every one did almost as he pleased in this respect. Consequently, the standard was a very low one. But a change took place with the organization of the Society. A regular course of study was adopted, and all wishing to practice the profession were subject to an examination before being admitted as licentiates. Other steps in advance were made, and in 1876 the College was opened. The result of the last examination bore testimony to the efficiency of the institution, which was now beginning to bear fruit. He concluded by presenting the gold and silver medallists, Messrs. David Watson and G. N. McMichael, respectively, to the Deputy Minister of Education.

Dr. Hodgins, in handing these gentlemen their medals, congratulated them on the success which had attended their studies, and hoped that it would stimulate them to further pursuits in their profession.

Prof. Stewart introduced the faculty honour men, viz: — Messrs. Watson, McMichael and W. B. Colter. The first named was presented with a gold medal, and the other two received certificates of honour.

Dr. Hodgins then addressed the Society. He felt somewhat at a loss among them, as he had very little information concerning either the College or Society. But in person having an interest in education, he could not but be pleased with what had been said in regard to the efficiency of the College and the record of the Association. Dentistry was an old art; we read of it being practised by the ancient Egyptians, and it was not unknown among other people of long ago. But, although it was so old an art, it was a remarkable fact that very little progress had been made in it up to about twenty-five years ago. From that time eminent men devoted their time and attention to dentistry, the result

being that numerous discoveries and improvements had been made in the practice of it. He referred to the dental exhibits at the Centennial as evidence of the rapid progress made in the science—for dentistry could now justly be termed a science—and said these specimens were of much value to the profession, and would greatly assist one in the study of dentistry. He hailed with great satisfaction the establishment on a sound basis of the Dental College, and hoped that those connected with it, and in fact all dentists in the Province, would apply themselves to the prosecution of special departments in the science, with a view to a diffusion of information concerning it. If the Society at their future Annual Meetings would make recognitions for pursuits in this line, so as to excite a greater interest in the profession, he felt sure there would be benefit to all in the information one would impart to the other.

Dr. Rowe read a paper on deciduous teeth. He referred to the general prevalence of disease in deciduous teeth, and the difficulty experienced in its treatment. There were a few points in connection with the treatment that should almost be universally taken into consideration, viz. :— The general condition of the teeth; the state of the tooth or teeth to which especial attention had been directed; and the age, and in many cases the health of the patient, never forgetting the fact that masticators were quite as necessary for the child as for the adult, and that the lost natural organs could not be replaced with artificial substitutes. The writer went on to refer to the mode in which he usually treated diseased temporary teeth, and pointed out several objections to premature extraction.

Considerable applause followed the reading of the paper, which was then discussed by the members, several of them related their experience in the treatment of temporary teeth. Numerous causes were assigned for decay in these teeth, the principal being: (1) eating food in a pulpy state; (2) want of pure air; (3) an over-quantity of blood in the head, causing too much heat; (4) neglect in taking children to the dentist; (5) bad blood; (6) bad food and over-eating, and (7) premature development.

The discussion ceased at ten o'clock, when the Society rose until nine this morning.

SECOND DAY'S SESSION.

The first feature of yesterday's meeting was the address of the retiring

President—Dr. C. H. Bosanko, in which he said that in that paper which was called the address of the retiring President, there was such latitude for ventilating ideas which might make the paper both long and uninteresting, that he was almost at a loss what to do. For instance, he might take advantage of his position to bore them with a history of dentistry in America, but that would not please them, when a much more elaborate and complete one might be purchased for a small sum. Again, he might read a history of the science in Ontario, the compiling of which would involve a great deal of labour, and from its incompleteness would prove a failure. He might also write a history of dentistry in his own county, that again, he was sure would neither interest nor edify many of his hearers. He thought it better, therefore, to confine himself for the few minutes during which he proposed to occupy their time, to the consideration of three or four of the leading questions, which he thought would be of interest to every one of them. Perhaps he might be pardoned if at this point he referred to what he had proposed to himself a year ago viz, the compiling and introduction of a constitution and by-laws for the better government of this Association; his reason, however, for not doing so was that as they met but once a year, and then only for about a day and a half, there seemed a probability of their being thrown out through fear of too much time being lost in discussing and adopting them. Yet he was still of opinion that there was great need of something which might be depended upon as an authority in many cases which might come up in the business of this meeting. Another matter which he considered of vital importance to the interests of dentistry, and which had evidently been overlooked by those asking for them, which was that there was nothing in the Dental Act, or in any of the amendments to it which gave them a legal right to call dentistry a profession; what he advocated was that they should have a clause in the Act which would entitle them when giving evidence in court as *dentists*, to the same fee as would a graduate in medicine or a Provincial Land Surveyor. He contended that while the law had given them such protection as it had given to druggists, it had not allowed them the same fees as it would a doctor or a Provincial land surveyor. They all knew the powerful influence of the law, having had an example of it the other day in Montreal, when nothing under Heaven would have prevented those men from attempting to walk the streets, but the unearthing of a forgotten and almost obsolete Statute; and as he considered it a very great task to make dentistry take a place as a liberal profession, while the law of the land said it was not,

he would strongly recommend that at their next application to Parliament, for any amendment, they would not fail to attach a clause to that effect. Again, their Educational Institutions should not be forgotten, first among which he would notice their offices and libraries, which should be generously supplied with all the text-books having reference to dentistry, for the benefit of students and themselves. The College too, should be kindly remembered, as they had to look to it for much theoretical knowledge which the students had to receive. On the revival of the scheme, three years ago, he was sceptical as to its benefit to dentistry, and had he been at the meeting he would have opposed it as being premature. With regard to the advisability of the Board of Examiners being teachers in the Toronto School of Dentistry, it was not in the province of this paper to discuss; but he hoped when that question did come up for discussion, it would be in a meeting called for that purpose, and before a new Board should be nominated by the ghost of a man who had neither been sprinkled nor baptized. With regard to professional literature, he thought the profession should support and give it their countenance by subscribing to such serials. He felt satisfied that such publications had been a power for the dissemination of knowledge in the past, and that if they all worked together its power might be doubled many times.

Dr. Chittenden said he would like to make one or two remarks with regard to dentists being entitled to rank as professional men; in the matter of fees. He felt satisfied that a little agitation would place them on the same footing as land surveyors and others. He did not believe in the Association being hampered by by-laws or a constitution.

Dr. Bosanko remarked that there were certain rules already on the books which would govern the Society during the coming year.

A vote of thanks to the retiring President was moved by Mr. M. A Snider, and seconded by Mr. J. Bowes, for which that gentleman briefly returned thanks, after which a paper on "The New Departure" was read by Dr. Chittenden. A long discussion ensued, in which Dr. Willmott and several other gentlemen took part.

The next paper read was on "Failure of Fillings," by Mr. J. G. Sinclair the discussion of which occupied the attention of the members till the meeting rose at noon.

The members re-assembled at 3 p.m. In the absence of the President, Mr. Jones, the chair was taken by the Vice-President, Mr. W. O. Guthrie,

Papers on "Air Chambers" by J. R. Dickson, and "Cohesive Foil and Leak Fillings," by C. P. Lennox, were read and elicited much discussion

The report of the Finance Committee was presented for adoption the remainder of the time up to 5.30 p.m. was occupied by the discussion of cases in Practice, etc., when the meeting adjourned.

Very few members were present last evening, most of them having been driven from the city by the intense heat, consequently there was no business transacted, with the exception of the report of the Finance Committee, when the meeting stood adjourned till the second Tuesday in September.

The annual examination of the Royal College of Dental Surgeons of Ontario was concluded on March 7th, 1879, when the following gentlemen were admitted members of the College, and received License to practice Dentistry in Ontario, viz :—

Edward Hart, Brockville, Faculty Gold Medallist, and College Silver Medalist; A. S. Vogler, St. Thomas, College Gold Medalist; W. A. Brownlee, Orangeville, Honor man; G. C. Davis, London; C. H. Pearson, Berlin; C. B. Hayes, Brockville; H. H. Manning, Peterboro'; Wm. Brace, Smith Falls; H. J. Broadfoot, Port Hope; C. L. Pearson, Berlin; C. H. Hills, Hamilton; G. E. Hanna, Kemptville; R. A. Harvey, Orillia; C. Fitzsimmons, St. Thomas; W. Cartwright, Stratford; T. A. M. Murtry, Port Hope.

Certificates of License were also granted to M. Kenney, Tilsonburg on time examination, and to J. J. Masson, Drummondville, on time application.

During the Session there have been in attendance on Lectures, at the Dental School in Toronto, 23 students; 14 of these went up for final examination, and 12 of them were successful.

In a few cases the parties are not of age, and the License is consequently withheld for a time.

The Examiners' report the recent examination as, on the whole, the most satisfactory yet held, a result due to the fact that owing to the raising of the matriculation, a more intelligent and better educated class of men are entering the Dental Profession.

The following attended Lectures this Session:

E. Hart, Brockville, O.; A. Vogler, St. Thomas, O.; W. A. Brownlee, Orangeville, O.; C. Hays, Brockville, O.; C. L. Pearson, Berlin, O.; W. H. Manning, Peterboro, O.; R. A. Harvey, Orillia, O.; W. J. Broad-

foot, Port Hope, O.; F. E. Crysler, Niagara, O.; W. Cartwright, Stratford, O.; T. A. McMurtry, Port Hope, O.; Geo. C. Davis, London, O.; J. F. Taylor, E. Richardson, Hamilton, O.; H. A. Wilson, Wardsville, O.; J. D. Shunk, Toronto, O.; T. Collins, London, O.; H. B. Weagant, Morrisburg, O.; J. Mills, Brantford, O.; Gordon.

SELECTIONS.

THE ENGLISH DENTAL ACT.

Sir John Lubbock deserves well of those who are unfortunate enough to have bad teeth, for trying to shield them against quacks. He has introduced a Bill which provides that no one shall have the right to call himself a dentist who is not properly qualified, and it is to be hoped that there will be no serious objection to its passing.

In this country we have so great a respect for individual liberty, that we usually shrink from imposing limits upon it, but we do think it is rather too much that any blockhead should be allowed to pretend that he is competent to undertake a dentist's very complicated and difficult duties. Of course, if a man chooses to have his teeth attended to by the first person who professes to know all about their ailments, nobody can prevent him; but the State can prevent imposters from conveying the impression that they have knowledge and skill which they do not really possess. And it is surely high time that the power was exercised. An ignorant fellow who, because he has failed in other callings, thinks he may as well have a brass plate with the word "Dentist" put upon his door, may inflict an incredible amount of unnecessary torture, and do mischief to thousands which can never be remedied. We may be quite sure that it is not from respectable dentists that objection to the proposal would come; but in any case the Legislature is bound to think only of the public interests. The poor would especially benefit by an arrangement which would enable them to avoid practitioners altogether unfit for their work. (*The Graphic*, London, Eng.)

ART AND ABSTRACTION.

The San Francisco *News Letter* tells the following story of one of the most prominent dentists of the city, who is also noted for his skill as an

angler. Recently he was called upon to extract a tooth of unusual size from the mouth of a lady. Her entrance had disturbed him in a reverie about the approaching trout season, and even while inspecting the patient's mouth he was absently engaged in his own mind in a tussle with a ten-pounder in the middle of Lake Merced. After gazing on the decayed molar, which was firmly set in the jaw, he went to his instrument drawer and pulled out a pair of tweezers nine inches long, which he hid up his sleeve. "Don't be afraid, madam," he said, vacantly; "I've got you well hooked, a hundred yards of line and a double gut leader, and I'll kill you within thirty minutes if I have to drown you in the tules!" The wild, weird shriek which followed the speech was heard a block off, and the next door neighbors thought that the doctor was vivisecting a parrot. Then there was a deathly silence. The lady had fainted. When she came to again the dentist was applying smelling-salts to her nose, and her tooth was out. He never knew what scared that lady so badly until after she had left, and when his assistant told him he would not believe it, until he found himself stringing false teeth on a gut-line and fixing trout-hooks into a set of false teeth. How often do art and abstraction go hand in hand.

BOOKS FOR REVIEW.

MECHANICAL DENTISTRY.—A practical treatise on the construction of the various kinds of artificial Dentures, comprising also useful formulas, tables and receipts for gold plate, clasps, solders etc. By Chas. Hunter, Mechanical Dentist Philadelphia, Lindsay and Blakiston, 1878.

This book is written by an English mechanical dentist—whom, we presume is not an operator. For many years there has been this division of labor in England, that mechanical dentists earn good livings at their speciality, receiving the models from regular practitioners who may never manufacture a set of teeth in their office. Now with all fairness, and remembering that this book is not written for this continent, we do not see that Mr. Hunter's volume was wanted. It is evidently written by a practical man, but by one who either does not know everything about this branch, or has not the art of writing all he knows. Mr. Oakley Coles' work on Dental Mechanics published by Lindsay and Blakiston is a better work of its kind. Mr. Hunter's has many faults; while there is nothing new in it. This is not generally the criticism applied to English contributions to dental literature, —such as the works of the two Tomes, Salter Heath, Richardson &c.

On hare lip and cleft palate. *By Francis Mason, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Thomas Hospital, etc. 66 Illustrations, London, J. & A. Churchill, 1877.*—This work by a pupil and former colleague of the late Sir Wm. Ferguson, whose confidental assistant he was for twelve years, is of great interest. It treats concisely of the various forms of hare lip and cleft palate. The second division of the work, that on cleft palate will of course—be more interesting to Dentists, though Mr. Mason rather depreciates mechanical apparatus, and leaves his readers entirely in the dark as to the modern improvements in obturators, etc. This might consistently have been added, as experience proves that in a fair proportion of cases of congenital cleft, mechanical apparatus has been preferable to any surgical operation. The work, however, is valuable as a study to the Dentist.

Physiology. *Preliminary Course Lectures by Jas. T. Whittaker, M.A., M.D., Professor of Physiology and Clinical Medicine in the Medical College of Ohio. Illustrated, Cincinnatti, Ohio. Robert Clarke & Co., 65 West 45 Street, 1879. Price $1.75, 272 pages.*

There is excuse for amplification in a course of lectures. The author of this little work has perhaps indulged too much in the literature and romance of physiology to put within its covers the gist of a physiological course; but it is interesting reading for non-students. Dr. Whittaker's book ought to popularize this special study, for after all, the more palatable one can make a science the more easily it is digested.

Treatment and prevention of decay of the teeth. *By Robert Arthur, M.D., D.D.S. Second edition, 50 illustrations, 216 pages. Philadelphia, J. B. Lippincott & Co., 1879.*—Anything from the mind and pen of Dr. Arthur is sure to command respect. His name has long been associated with a more conservative treatment and prevention of decay than generally prevailed. In the present work he has undertaken to show:

1st, That all the teeth of every individual, with rare exceptions, may be preserved.

2nd, That decay of the teeth may be *prevented* from occurring at places where it is most destructive and requires the most difficult, painful and expensive operations for its arrest.

3rd, That all the attention necessary for the certain preservation of the teeth, provided it is given in time is of simple character, and quite within the ability of any dentist of ordinary acquirements.

4th, *That the pain usually attending dental operations may be entirely voided.*

5th, That, as the operations required are of simple character, the cost of the preservation of the teeth will be diminished.

In the present edition, the author while still adhering to the general principles involved in his method, "because aware of certain defects of detail which formed very serious objections to their adoption" which have however, "been entirely obviated during the past five years."

Dr. Arthur's life-work is certainly commendable; and few will dispute the soundness of his theories; but the question of its practicability arises in a country where as yet the dentist is merely regarded as an operator instead of an adviser. Dr. Arthur's views if impressed upon us as a profession, ought to do something towards serious thought in this direction. But this needs not only an education of parents, but of physicians as well. Yet there is no reason a dentist in his office should not impress the facts and theories of the author upon his patients..

We hope the book will have a large sale in Canada.

American Health Primers. *Edited by W. W. Keen, M.D., Fellow College Physicians, Philadelphia, Lindsay & Blakiston, Publishers, Phil.* We earnestly hope for a large circulation of these primers, not only over the border, but in the Dominion as well. The American men of to-day are not as good a stock as their ancestors who came out in the "Mayflower"; while the women are the prettiest, sickliest, most fascinating invalids of any women in the world. The tide of European emigration will yet make the American a nonentity in his own country, unless such advice as these primers are intended to give, reaches the ear and heart of the people. If the people went through such a curriculum, quack medicine and domestic dosing would be below par. The popularity of the style, the avoidance of technical terms, the reputation of the authors and the object in view will commend them largely. The following is the list already in press to be issued about once a month.

I. Hearing, and how to keep it. II. Long life, and how to reach it. III. Sea Air and Sea Bathing. IV. The Summer and its Diseases. V. Eyesight, and how to care for it. V. The Throat and the Voice. VII. The Winter and its Dangers. VIII. The Mouth and the Teeth. IX. Our Homes. X. The Skin in Health and Disease. XI. Brain work and overwork.

Other volumes are in preparation, including the following subjects :—

"Preventiable Diseases," "Accidents and Emergencies," "Towns we Live in," "Diet in Health and Disease," "The Art of Nursing," "School and Industrial Hygiene," "Mental Hygiene," etc., etc. They will be 16mo in size, neatly printed on tinted paper, and bound in paper covers, Price, 30 cts; flexible cloth, 50 cts.

SCRIBNER FOR APRIL. The April SCRIBNER has several conspicuous personal attractions, three of the illustrated papers being devoted respectively to "Henry Bergh and his Work," "John Ericsson" and "Actors and Actresses of New York," all these covering, what is for the magazines, almost untrodden ground. The paper on Ericsson is by Col. W. C. Church, of the *Army and Navy Journal*, and is, singularly enough, the only authentic sketch of this remarkable engineer (no less remarkable as a man) which has appeared in popular form. Among the topics treated are the precocity of the young engineer, who, in the depths of a pine forest, at the age of nine, invented, among other contrivances, a ball-and-socket joint upon hearing one mentioned, at the age of thirteen was put in charge of 600 men in the survey of the Gothic Ship Canal, with an attendant to carry a stool to raise him to the height of his leveling instruments; his career in the army and in England; competiton with George Stephenson for best locomotive; superior speed of Ericsson's *Novelty* engine; invention of the steam fire engine and of the caloric engine; the invention of the screw propeller and how England lost Ericsson; the romantic story of the Monitors; the torpedo vessel, the *Destroyer;* his last invention, the solar engine (first complete description); character and personal habits. In interest and importance this paper is thought by the publishers to be not inferior to the one on Edison in the November number, which has been so popular both here and in England. It is fully illustrated.

The paper on "Henry Bergh and his Work" is largely anecdotal, and and is written by C. C. Buel, and illustrated by Kelly and Muhrman. The personal appearance and history of Mr. Bergh, his early interest in humane work, his dangerous and courageous fight against opposition of all kinds, the routine of his work, and his methods of carrying his points from part of the subject matter, while the sketches show Henry Bergh on duty," "Milking a Cow in the Street," An Ambulance at Work," "The Bull-dog of the future," etc.

The paper on "Actors and Actresses of New York," by J. Brander Matthews, contains sketches of some of the best of the metropolitan

players, with drawings in character, by Abbey and Reinhart, representing John Brougham as *Sir Lucius O'Trigger*, Charles Coghlan as *Charles Surface*, Mrs. Gilbert as *Mrs. Candour*, and Harry Beckett, James Lewis, Mrs. Booth, Miss Jewett, Miss Claxton, Mr. Thorne and Mr. John Gilbert in other parts.

In the same vain is a short paper in the "Home and Society" department of the number entitled "H. M. S. *Pinafore* for Amateurs," with directions as to setting of stage, dressing of characers and cast of parts for this delightful and popular opera. Three drawings by Mr. Reinhart (one of Mr. Thomas Whiffen as *Sir Joseph Porter, K. C. B.*) are intended as suggestions towards the production of the piece by non-professionals. The writer concludes with a recommendation that part of the receipts of any such performance should be sent to Mr. Gilbert or Mr. Sullivan, whose addresses are given.

"In a Snailery," by Ernest Ingersoll, is a natural history paper on an out-of-the-way-subject, upon which Mr. Henry Marsh has expended some delicate engraving.

"The Stickeen River and its Glaciers." by Maj. W. H. Bell, describes the wonderful scenery of the perilous passage from Fort Wrangel to Glenora.

"The Measure of a Man," by William Page, the artist, is an account of his rediscovery of the ancient proportions of the perfect human figure, with diagrams in explanation of the theory.

The unillustrated material includes an unsigned paper, entitled "A Journey to a Political Convention" (the Cincinnati Convention, 1876), which may be read with interest in connection with Presidential forecastings; an essay by Rev. Dr. C. C. Tiffany on "The tendency of Modern Thought as seen in Romanism and Rationalism," the author finding in the antipodal systems a certain drift toward the same general method of thought; a short story by Miss Adeline Trafton, called "Fraülein," and another by Kristofer Jenson, a well-known Norwegian author, entitled "Half-witted Guttorm." written especially for the Magazine, and turned into English by Mr. Boyesen. "Falconberg," by the latter, comes to an end with this number. Mrs. Burnett's story of "Haworth's," reaches a sixth instalment. The poetry is cotributed by R. H. Stoddard, Edna Dean Proctor, Elaine Goodale, Andrew B. Saxton, David S. Foster, Augusta Moore and Mary E. Bradley.

The departments are fuller than usual. In "Topics of the Time," Dr. Holland discussed "Some Thin Virtues," "Improving Politics,"

and "The Medical Profession and the State." In a "Communication," Rev. Augustus Blauvelt contributes some curious experience of his own towards the solution of the question, "Are our Insane Retreats inhuman?"

"Home and Society" contains the "*Pinafore* for Amateurs," already mentioned, "In Tea-cup Time," and "Duties of a Nurse." The reviews in "Culture and Progress" are a Cook's "Conscience" (a striking notice), "Drone on Copyright," a comparison of Black's "Macleod of Dare," and Hardy's "Return of the Native," etc., etc. "The World's Work" has descriptions of "Lighted Buoys," "The Pedo-Motor," "Stone Planing Machine, "Paper for Roofing Domes," "Butter-package for Express, etc., etc. "Bric-à-Brac" is considerably enlarged and has a *ballade*, some negro and Irish dialect, a satire on the decorative mania, etc., etc.

EDITORIAL.

END OF VOLUME IV.

This is the end of volume IV. Like the Millerites "last day" it has been a long time coming, but unlike that day, it has come. We have been taught a lesson, even in the attempt to publish a quarterly, which will not be forgotten, and by which future subscribers will profit. That is, that a dentist in active practice, and having other hobbies and horses to ride, is over-weighted in trying to *publish* as well as edit a journal. Yet this is no reason why it should become an advertising medium for any one depot, college or manufacturer, and it will not.

We propose now to secure a responsible publisher, well known in Canada, with whom subscribers and advertisers will have to deal. The whole responsibility of bringing out the Journal *regularly*—a very great drawback we must admit; all business correspondence, advertising and payment of subscriptions will be out of our hands. We can then give plenty of time to our legitimate work; the Journal will be better managed, and every body will be better pleased.

It will be a few months before the next number is issued. It will speak for itself.

FEES.—When in England two years ago, we found that the question of dental fees was pretty much settled in the same way as the question of recompense in any profession. No one scale of charges would be either

fair or honest. One dentist will fill a cavity for a shilling : another for nothing less than a guinea. The shilling man is looked upon as getting his proper fee : the guinea man as getting *his* proper fee. Just as one barrister will charge you a guinea for advice, for which another would charge you ten.

The best dentists never charge less than a guinea for extracting each tooth, destroying pulps and any and all similiar operations : also for consultations. In the artificial department, for one tooth on plate, from five guineas : for a full upper set, from twenty-five guineas.

Our Canadian Dental College. We had great pleasure lately in visiting the Royal College of Dental Surgeons of Ontario, and seeing with our own eyes the advantage of such an institution in Canada, and the progress already made by the Students. A very attentive and gentlemanly class is on the roll, and without an exception, a credit to their teachers. Drs. Willmott and Teskey labor indefatigably, and at much sacrifice of personal and professional time and money. Dr. Teskey's microscopical collection prepared by himself since his return from his higher studies in Europe does him great credit. It would pay any Dentist in active practice, and who has not had the advantage of a college course, to attend even one Session. Of course the College is not the *summum bonum* that many might desire. Neither are any of its rivals on this continent. At any rate it is not a manufacturing establishment for titled conceit. Its aim is solid and its work will endure. Mr. Bosanko of Barrie, one of the Clinical Instructors gave an interesting clinic in gold filling while we were present.

Dental Colleges over the Border.—From an address delivered before the American Academy of Dental Science on the 30th Oct., of last year, by Dr. Chas. W. Eliot, LL.D., President of Harvard, we learn that the movement in favor of higher qualifications in Dental Colleges is gaining ground. Dr. Eliot maintains that the American Colleges "set before the young men who do enter them much too low a standard"; complains that they do not demand a preliminary education : "No matter how ignorant and untrained a man may be, most dental schools are open to him. Three schools, two of which are by no means of the strongest sort, state in effect that a knowledge of the ordinary branches of an English education is necessary for admission. This statement is obscure ; but it probably means that candidates for admission

must be able to read, cypher and write." The Dr. then pays a deserved compliment to the high requirements of the Dentists Act in England; urges an "admission examination" at Dental Schools, and a longer period of study for the degree. "Two schools have very lately required three years study, and one other has given notice that it intends to make that demand. On the other hand, two schools offer their degree upon examination after attendance upon a lecture course of four months duration, without further inquiry into the candidates qualifications. He also objects to "the irrational division of the year into a fall term, a winter session and a spring term." "The Harvard Dental School stands alone in renouncing completely this division of the year, and carrying its instruction consecutively through the academic year from Oct., 1st, to July 1st. For the orderly and progressive treatment of Anatomy, Physiology and Chemistry, it is difficult to imagine a worse division of the Academic Year than that which has so long prevailed in American Medical and Dental Schools."

The Dr. then speaks out against the fraud of accepting five years practice instead of one year of study. "If a man can bring evidence that he has practised dentistry five years—no matter how ignorantly, he can obtain the degree of one of these schools in a single Session."

"*Is not the public right in regarding the American Dental Diploma as small evidence of general culture? Is it always good evidence even of thorough acquaintance with dentistry*"? The Dr. further pleads for a change in the system of examinations; and proposes the endowment of a number of the Colleges.

We regret that we have not space to print the whole of this interesting address. It has struck a key note which must have an influence upon the future of dental education. It fully corroborates impressions we have long held and often expressed as to Dental Colleges; and will no doubt, waken up the teachers as well as the taught.

"WITHOUT HIRE, GAIN OR HOPE OF REWARD."—The Quebec Board some time ago prosecuted a person for practising without a license, not only in the office of a licentiate but outside of it. The father of the Defendant swore in Court that his son, a lad on the shady side of thirty, was, and had been practising for him "without hire, gain or hope of reward," and that he (the father) had been personally responsible for actions for damages caused by his son. The Board lost the case. We call attention to the necessity of amending this among other clauses of

the Act. Why should any one be allowed to practise dentistry "without hire, gain or hope of reward," unless qualified to do so? No druggist can dispense poison unless he is licensed.

In our Mother-Land. On the 22nd of last July, the Dental act, whereby Dentists of the Great Britain and Ireland secure legal recognition and a professional status became law. After August of the present year it will prevent unqualified men from entering the profession. In conjunction with this we find the existing connection with the Royal College of Surgeons, the Board of Examiners for the Diploma in Dental Surgery of the College; the Dental Hospital of London and Medical School, the courses of Dental Lectures and the appointment of Dental Surgeons in the various Medical Hospitals of London, etc., the National Dental Hospital and College, the Liverpool Dental Hospital, various Dental Dispensaries and Dental Hospital throughout the Kingdon; such Societies as the Odontological Society of Great Britain; the Odonto-chirurgical Society of Scotland; the Students Society of the Dental Hospital of London; the Diploma in Dental Surgery obtained from the Royal College of Surgeons of Ireland, &c. One can see from the character of the papers read before the Societies: the absence of wild speculations; the close alliance with medicine and surgery, at least a higher standard of education than has yet been hinted at on this continent. We do not believe it is possible at present for our American cousins to make such a curriculum compulsory as is required to obtain the diploma in Dental Surgery from the R. C. S. of England. Of late years a great deal of time and labor has been devoted to improving the professional standing of the profession; but the solid work of education has been going on without brag or ostentation, and those who get English diplomas go through a course of no ordinary character, both as to preliminary and final examination British dentistry lacks a good deal in the operative and practical direction; but this is improving every day. Its standard of educational requirement at least, has no rival.

The Act passed last July, compels registration before the first of August of this year, and gives a privilege of "practising dentistry *in any part of Her Majesty's Dominions.*" Of course this is an error so far as Ontario and Quebec are concerned, as our local legislation in this matter has precedence of legislation in England. Any Dentist anywhere can register before the first of August. This is surely more than democratic. The fee is £5, Dentists in Canada can be registered as colonial dentists;

our American cousins as foreign dentists. The License of Ontario and Quebec is recognized as qualifying for registration. The register is divided into three classes; 1st, dentists in Great Britain and Ireland engaged in practice at the passing of the act; 2nd, Colonial Dentists; 3rd, Foreign Dentists. The Registrar's address is W. J. C. Miller, Medical Council Office, 315 Oxford Street, London W. England, who will give all particulars required. A number of Canadian Dentists have already registered.

INSTRUCTING THE PUBLIC.—A subscriber has sent us a little pamphlet taken largely from the standard works upon dentistry, and which contains Goodsir's old theory of dental development. The dental germ is now known to be contemporaneous with the enamel germ, and by reference to the *later* editions of our standard works, our friend could have seen his mistake.

However, the point which we wish to make in alluding to the pamphlet is that which was announced in the first number of this Journal issued, and which has been consistently adhered to ever since, viz., that these pamphlets are objectionable if they are imposed upon the public as original, and used to advertise one dentist exclusively. As far back as 1868, we urged special means of instructing the public by introducing questions and answers in school books, by anonymous pamphlets, impersonal contributions in the press, public and private lectures, etc. We believe that the Quebec Board propose issuing a short form of instruction to be inserted in our school books. There can be no objection to dentists enlightening the public on dental questions, provided they do not plagiarize, or assume as their own, matter they have copied from text-books. It is very easy to instruct the public, and any legitimate means ought to be encouraged. Of course one ought to avoid any personal allusions, or personal advertisement, which would savor of self-praise. The small wits of our press would find therein food for weak wit, and the motives, perhaps quite disinterested might be misjudged.

If it is legitimate for Dr. Jones to lecture before the public on the Eye, why is it not proper for Mr. Brown, Dentist, to lecture on the Teeth? Let us all have as much scope as possible to instruct the public decently and professionally.

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